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OXEN AND BUFFALOES.

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THE CATTLE OF HARRIANA AND SIRSA.

*Note by* VETERINARY CAPTAIN H. T. PEASE, F.Z.S., *Civil Veterinary Department.*

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*Other PAPERS that may be consulted :*

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# THE AGRICULTURAL LEDGER.

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## OXEN AND BUFFALOES.

[ Dictionary of Economic Products, Vol. V., O. 551—94.]

### THE CATTLE OF HARRIANA AND SIRSA.

Note by VETERINARY CAPTAIN H. T. PEASE, F.Z.S., Civil Veterinary Department.

#### ROHTAK DISTRICT—HARRIANA CATTLE.

It is deemed advisable to preface this note by indicating very briefly the names, by which the great divisions of the country in this part are known to the people, as the cattle are constantly referred to by the ryots, of being from these various divisions, so that, to an ordinary individual to whom the divisions are not known, but little is conveyed by the information given. For facility of reference, therefore, the divisions are as follow:—

- (1) *Harriana Bangar or Des*—means the tract to the east of the Hissar district and a great part of the Rohtak district.
- (2) *The Nali, Sotar and Sot*—includes all the Ghaggar valley and the country immediately adjoining it.
- (3) *The Bagar*—or sandy country stretching south of the Nali or Ghaggar valley to Bikanr where it meets Marwar. It stretches east nearly to Hissar and west nearly to Bhawalpur.
- (4) *The Rohi or Fungal*—is the great dry tract between the Ghaggar and Satej valleys. Sometimes the Malwa is considered to include that part of the *Fungle* or *Rohi*, which is now inhabited by Sikhs of the Malwa proper.
- (5) *The Nai Nadi (up-country) or Hither*—is the tract lying below the Danda all along the river Satej.

At the beginning of the present century the settled population of this tract was extremely scanty, and there was practically no cultivation. The valley of the Ghaggar was covered with a dense growth of *karil*. The whole of the great tract was a rolling prairie of long grass over which roamed wandering pastoral tribes almost all Mussulman Rajputs, Bhatti, Tur, Jonja, Chauhan, Panwar, etc., driving large herds of cattle hither and thither in search of grass and water. The Sikh Jats in the Malwa, too, were in the habit of driving their cattle southwards into the prairie for pasture and sometimes the Bodlas, Chistis and Waltas of the Satej valley drove their herds into the uplands or according to season the Turrs and Panwars drove their cattle into the Satej lowlands for pasture.

*Harriana*—or the green country comprises about 292 villages of the Hissar district chiefly in the Hissar and Hansi tahsils and the greater part of the Rohtak district. The part of the tract lying in the Hissar district as described in the Gazetteer embraces two varieties of soil technically described as *dakar* and *rausti*, or perhaps what we should term loam and sandy loam. The soil is largely interspersed with

Divisions of  
the tract.

Early  
inhabitants.

OXEN.	Cattle of Harriana
ROHTAK DISTRICT.	<p data-bbox="378 344 916 409">patches of sand and water lies at great depth. The climate is dry and healthy away from the canals, the yearly rainfall being small and almost entirely confined to the rainy season.</p> <p data-bbox="378 402 927 1398">This tract has long been known and justly celebrated for the excellence of the cattle it produced. In former times nearly the whole of the country was jungle or uncultivated land producing in years when ordinary rain fell, an extensive growth of natural pasture grasses such as <i>dub</i> (<i>Cynodon Dactylon</i>), <i>anjan</i> (<i>Pennisetum cenchroides</i>), <i>sanwak</i>, etc., the inhabitants were a more or less pastoral people maintaining considerable herds of cattle. The excellence of the cattle generally may be ascribed to the facts that the soil and climate are very suitable for cattle breeding and rearing, to the excellence of the natural pasture and to some amount of judgment in breeding and the general management of the herds. Great numbers of cows were kept. Bulls of superior stock were released as an act of piety by those whose relatives died, and care was taken to have suitable bulls with the herds. The young male stock was early castrated. Added to this we have the fact that times of scarcity were of no infrequent occurrence. The scantiness and uncertainty of the rainfall made life very precarious as regards water. When the rains failed, not only did the grass dry up, but the ponds become brackish and cattle perished in hundreds of thirst and starvation; even in ordinary seasons the people did not give their cattle water oftener than once in three days, and no doubt during such times the weaker cattle perished whilst the more robust survived, and thus a very hardy stock capable of enduring great hardships only remained. Whatever the causes there can be no doubt as to the excellence of the stock produced on the tract, the decline of which, especially at the present time, can only be a matter for regret. Of late years, owing to increase of the population and the consequent extension of cultivation, the extensive breaking up of even the <i>shamilai</i> lands originally designed for grazing grounds, cattle breeding has suffered very greatly and is decidedly on the decline, so that we find less attention given to the subject than formerly, was the case. This is the opinion of every Agriculturist and other native I have spoken to on the subject. To show the effect, which retention of waste as grazing land has on cattle-breeding the effects of Munshi Amin Chand's revenue rates on 28 villages made in 1863 in Eastern Harriana may be noted. In this settlement <math>\frac{1}{4}</math>th of the area of each estate was excluded from assessment for pasturage and cattle increased 92 per cent. under the settlement. The extension of cultivation must drive out cattle-breeding as an occupation as it is necessary in order to breed cattle according to the method adopted by the natives of this country to be able to move the herds about when pasture fails in any one part. This is out of the question almost at present, in fact in many parts the so-called grazing ground is as bare as a billiard table for many months of the year and the cattle have to be stall fed. From a comparison of the census of cattle for the Rohtak district it will be seen that the numbers have by no means decreased during late years, and it is difficult therefore to understand that cattle-breeding can be on the wane, but it is nevertheless the fact. In certain parts of the tract the numbers of cattle kept are still very great, notably in the Maham tahsil (old division) and in Hansi. In Jhajhar too, the numbers are great taking into consideration the size of the villages, and the eastern villages also contain great numbers. Speaking generally I should say that the better class of indigenous cattle are found in the north-western corner of the Rohtak district, parts of Bhiwani and Hansi. In the southern portion of the Rohtak district the cattle are very good too, especially about Beri, Chuchakwas, Jahazgarh and some of the neighbouring villages. But the whole tract is a cattle-raising country of no mean order. The extension</p>

and Sirsa.

(H. T. Pease.)

OXEN,

ROHTAK  
DISTRICT.

of cultivation, however, has lessened to a great extent the amount of cattle-breeding properly so-called, for with diminution in natural pasturage comes increased revenue, necessity of storing fodder for the cattle which raises the cost of production, and especially of rearing, and the consequent necessity for selling off young stock at an early stage of their existence is more urgent. The effect of bringing land under cultivation provided that the land remains "*barani*" has, of course, not such a prejudicial effect on cattle breeding as has the introduction of irrigation. The chief crops grown on *barani* land yield a considerable quantity of storeable fodder and a good deal of grass grows on the fallow fields. The people have certainly adopted the necessary precaution of storing forage to a wonderful degree and almost everywhere stacks of *jowar* are to be seen in the fields and surrounding the villages; but they sell off a great number of their stock at from 1 to 2 years old as a rule, and thus save the cost of rearing them. The number of cattle does not decrease apparently, because greater numbers are required for cultivation and the people keep more cows for milk supply and these must of course breed, otherwise the supply of milk would cease. Still much less care is given to breeding especially in canal villages; the selection of good bulls is not so carefully attended to, and we find great lack of uniformity in the herds. Another cause for decline in breeding is the fact that in some parts the practice of turning loose bulls on religious grounds is falling into disuse. We find this to be the case in those villages where Mussalmans are in greater proportion; here the number of bulls maintained is generally few, and the quality not up to the average of Jat or other villages.

Owing, however, to the indigenous cattle being so good and the trade in young stock so brisk, it will be a long time before the people will so far neglect their stock as to reduce it to the level of that of many other districts of the Panjab. There must always be a considerable amount of breeding carried on, as so great an area of the land is *barani* or dependant on rain and therefore produces only such crops as necessarily yield a considerable quantity of fodder, *jowar*, *bajra*, gram, etc., etc., and bears grass very suitable for fodder during a considerable period of the year whilst it is uncropped.

**Production of Cattle.**—The whole of the tract produces a number of cattle greatly in excess of requirements and must be looked upon as a store from which are supplied many of those districts in the Panjab and North-Western Provinces, in which cattle breeding has been completely pushed out by extensive cultivation and those in which the physical characters of the country, the soil and climate do not permit of good cattle being raised, and the production of cattle does not meet the requirements of the cultivators. Very great numbers of cattle annually leave the tract, many as calves being taken by Banjaras and Baiparis, who purchase throughout the districts and attend in considerable numbers the fairs held at Jahazgarh, Hissar, Bhiwani and Sirsa. The young stock are taken off to districts where jungle is to be found and reared there, then disposed of to the zamindars. The income to the tract from this trade is many lakhs of rupees annually. In addition to this we have a pretty constant drain by ordinary purchasers from various parts of the country. The cattle, it is said, go as far as Calcutta, especially milch cows which are purchased by Banjaras and taken to the Kosi market in Mathura whence they are taken by purchases from this part. The accompanying statement showing the total number of cattle and area (cultivated and non-cultivated) in the district of Rohtak for the years 1868, 1873, 1878 and 1893 is useful as showing the increase in numbers in the district. This gives 1 head of adult stock to every 4.4 acres of total area and one pair of bullocks to every 14.8 acres of cultivated land. This does not include calves or other stock.

OXEN.

Cattle of Hariana

ROHTAK  
DISTRICT.

Statement showing total number of villages and cattle in each Tahsil, area in acres (cultivated and non-cultivated) in the District of Rohtak.

TAHSILS.	Number of villages.	AREA IN ACRES.		NUMBER OF CATTLE.								REMARKS.	
		Cultivated.	Non-cultivated.	Total.	Bulls.	Bullocks.†	Cows.*	Total.	Bull-calves.	Buffalo-cow.†	Buffalo-bulls.	Buffalo-calves.	Grand Total.
Rohtak	114	1893-94- 323,761	1893-94- 54,886	378,647	1895.* 259	1893-94- 39,535	1893-94- 41,684	81,498	.....	18,370	892	.....	.....
Gohana	83	178,123	37,013	215,136	Information not received.	25,201	21,390	46,591	.....	19,480	584	.....	.....
Sampla	127	220,018	41,826	261,844	271	35,367	31,627	67,265	.....	15,368	319	.....	.....
Jhajjar	190	233,154	65,366	298,500	211	28,016	38,189	66,416	.....	8,832	571	.....	.....
TOTAL	514	985,036	199,091	1,184,127	741	128,139	132,890	261,770	.....	62,050	2,866	.....	336,186

\* The statistics regarding bulls cannot be accurate. I estimate that there are at least 1,200 local bulls in the district.

† Includes calves, young stock.

Statement showing total number of villages and cattle in each Tahsil, area in acres (cultivated and non-cultivated) in the District of Rohtak.

O. 551-94.

\* The statistics regarding bulls cannot be accurate. † Estimate that there are at least 1,200 local bulls in the district.

† Includes calves, young stock.

Statement showing area of each Tahsil in acres (cultivated and non-cultivated) and total number of Cows and Bullocks for the years 1868-69, 1873-74 and 1878-79.

		and Sirsa.		(H. T. Pease.)		OXEN.	
						ROHTAK DISTRICT.	
TAHSILS.	AREA IN ACRES.						REMARKS.
	CULTIVATED.			NON-CULTIVATED.			
	In 1868-69.	In 1873-74.	In 1878-79.	In 1868-69.	In 1873-74.	In 1878-79.	
Rohtak	•	•	•	•	•	•	•
Jhajjhar	•	•	•	•	•	•	•
Sampla	•	•	•	•	•	•	•
Gohana	•	•	•	•	•	•	•
Total	•	•	•	•	•	•	•



OXEN.

Cattle of Hariana

ROHTAK  
DISTRICT.

**Distribution of Stock.**—Cattle from this tract are purchased by three different classes of purchasers, namely, Banjaras, Baiparis and agriculturists. The former are chiefly "Chauhan Rajputs," the latter "Roras." The following are the receiving districts: Gurgaon, Delhi, Hissar, Umballa, Meerut, Saharanpur, Muzaffarnagar, Bulandshahr, Aligarh, Nabha, Patiala, Jeypur, Dojana, Ulwar, Dera Ismail Khan, Dera Ghazi Khan, Shahpur, Ferozepur, Amritsar, Agra, Etawah, Cawnpur, Mainpuri, Etah and Rampur.

The Roras purchase adult stock generally selling on the "Udhar" system and taking payment in two *kists*, one payable in January and the other in July. They come from the Panjab. Banjaras come chiefly from the North-Western Provinces and purchase two classes of stock, *viz.*, small adult animals fitted for work in light soil or sugar mills, and young stock which they dispose of to cultivators and others who have grazing sufficient to meet the requirements for rearing these animals. A very good idea of the distribution of the stock may be gained from a perusal of the tables under cattle fairs.

Cattle-Fairs.

Large cattle fairs are held in the tract twice a year at Jahazgarh in the Jhajjar tahsil of the Rohtak district, and at Bhiwani and Hissar in the Hissar district.

The Jahazgarh fair is a very old established one and dates back from the time of the Jhajjar Nawab. It was originally held at Beri, but was moved to Jahazgarh some 80 years ago. It was originally given out on contract for about Rs500, but the price steadily rose to Rs2,000. It came into the hands of Government in 1837 and was then let out on contract for from Rs3,000 to Rs3,000 per annum. Some 25 years ago it was taken over by the district officers. Since that time it has gradually improved under the fostering care of the Deputy Commissioners. The ground is now fenced with wire fencing and surrounded by a deep broad ditch. There is a large and beautiful tank for watering the cattle and good wells have been sunk in case this fails. Buildings have been put up for the accommodation of the traders and for the staff employed in the management of the fair. There is also a small rest-house. The whole of the arrangements are excellent. A Tahsildar and a number of Zaildars attend to the arrangements under the orders of the Deputy Commissioner. Cattle enter the fair by one gate and sales are usually effected in the part of the ground adjoining the entrance gate. All sales are registered and a sale ticket is given to the purchaser by the *Mohurrirs*, a number of which are employed. Cattle sold pass on to the ground near the exit gate and are there picketed if necessary. When animals enter the ground a ticket is given to the owner, and no man can take an animal out of the fair ground unless he either has the entrance ticket or the sale ticket; this prevents cattle stealing. Disputes are settled by the Tahsildars and Zaildars by arbitration generally to the satisfaction of all concerned. The sanitary arrangements are very good indeed, numbers of sweepers being employed. A veterinary assistant is in constant attendance with a supply of medicines provided by the District Board. A hospital for the reception of cases of animals suffering from contagious diseases is established. Altogether the arrangements are perfect and the fair is undoubtedly the best managed and most attractive in the tract. The figures and records connected with the fair are as follows:—

JAHAZGARH SPRING CATTLE FAIR, 1895.

*Statement showing the number of cattle exhibited at the cattle fair.*

Bullocks.	Cows.	Buffaloes, Female.	Buffaloes, Male.	Camels.	Horses.	Mares.	Goats.	Donkeys.	TOTAL.
38,859	3,826	1,925	1,397	102	336	150	5	1	66,601

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JAHAZGARH SPRING CATTLE FAIR, 1895.		ROHTAK DISTRICT.
Statement showing the names of districts from which the cattle sold at the fair were brought.		

Serial No.	NAME OF DISTRICTS.	Number of cattle sold.	REMARKS.
1	Rohtak . . . . .	8,336	
2	Hissar . . . . .	835	
3	Ferozepur . . . . .	150	
4	Gurgaon . . . . .	4,694	
5	Bikanir State . . . . .	158	
6	Jhind do. . . . .	4,269	
7	Ulwar do. . . . .	1,494	
8	Jaipur do. . . . .	746	
9	Delhi . . . . .	1,411	
10	Khatri State . . . . .	373	
11	Dujana do. . . . .	1,481	
12	Loharu do. . . . .	830	
13	Patiala do. . . . .	925	
14	Nabha do. . . . .	634	
TOTAL .		25,336	

JAHAZGARH AUTUMN CATTLE FAIR, 1895.
Statement showing daily attendance of cattle, number sold, fees recovered and amount changed hands.

Date.	Number of cattle came.	Number of cattle sold.	Fees.	Amount changed hands.	REMARKS.
			R a. p.	R	
September 10th .	6,957	3,537	1,204 0 0	77,056	
Do. 11th .	6,362	3,065	1,391 0 0	89,024	
Do. 12th .	6,365	3,298	1,434 0 0	94,076	
Do. 13th .	5,955	2,222	1,371 0 0	87,744	
Do. 14th .	5,520	2,754	1,111 0 0	71,104	
Do. 15th .	4,870	2,220	866 0 0	55,424	
Do. 16th .	4,222	1,939	720 0 0	46,080	
Do. 17th .	3,240	1,583	617 0 0	39,488	
Do. 18th .	2,362	1,277	549 0 0	35,136	
Do. 19th .	2,481	1,330	527 0 0	33,728	
Do. 20th .	1,920	939	394 0 0	25,216	
Do. 21st .	1,146	655	263 0 0	16,832	
Do. 22nd .	807	337	146 0 0	9,344	
Do. 23rd .	100	167	60 0 0	3,840	
Do. 24th .	103	2	0 3 7	13	
TOTAL .	52,310	25,325	10,703 3 7	6,85,005	

OXEN.	Cattle of Harriana			
ROHTAK DISTRICT.	JHAZGARH AUTUMN CATTLE FAIR, 1895.			
PRICES.		Number of cattle sold.	REMARKS.	
From	To			
Rs	R			
10	20	2,971		
20	30	2,495		
30	40	2,892		
40	50	3,693		
50	60	5,429		
60	70	2,950		
70	80	2,181		
80	90	1,768		
90	100	807		
100	110	83		
110	120	45		
120	130	4		
130	140	7		
TOTAL .		25,325		

*Statement showing the names of the districts from which the cattle sold at the Jhazgarh Autumn Fair were brought in 1895.*

Serial No.	Name of Districts.	Number of cattle sold.	Young or adult.	REMARKS.
1	Rohtak . . . .	2,601	Chiefly adult.	Harriana.
2	Hissar . . . .	4,530	Adult.	Ditto.
3	Ferozepur . . . .	52	Do.	Jangle.
4	Gurgaon . . . .	4,067	Do.	Mewati and Harriana.
5	Bikaner . . . .	35	Do.	Bikaner.
6	Jhind . . . .	4,528	Do.	Bondh and Bagar.
7	Ulwar . . . .	3,741	Do.	Mewati.
8	Jeypur . . . .	887	Do.	Marwar.
9	Delhi . . . .	940	Do.	Desi.
10	Khairati . . . .	321	Do.	
11	Dujana . . . .	777	Do.	Parbatsari (cattle like Harriana).
12	Luharu . . . .	940	Do.	Ditto.
13	Patiala . . . .	993	Do.	Harriana and Bagar.
14	Nabha . . . .	569	Do.	Ditto.
15	Kurnal . . . .	75	Do.	Baogar.
16	Jodhpur . . . .	69	Do.	Nagori.
17	Pataudi . . . .	194	Do.	Harriana.
TOTAL .		25,325		

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JAHAZGARH AUTUMN CATTLE FAIR, 1895.							ROHTAK DISTRICT.
Statement showing the districts to which the cattle, including buffaloes purchased in the Fair, were taken.							
Serial No.	Name of District.	NUMBER OF CATTLE PURCHASED.			Breeds and by whom taken.	Class.	REMARKS.
		Autumn Fair, 1895.	Spring Fair, 1895.	Total.			
1	Aligarh . . .	2,742	4,069	6,811	Bonds, Mewati, Hariana, Bagar, Eikanir, a few Marwari chiefly by dealers.	Small.	
2	Muzaffarnagar . . .	2,735	3,339	6,074		Medium.	
3	Mewat . . .	2,913	2,353	5,266		Do.	
4	Saharanpur . . .	3,829	3,145	6,965		Do.	
5	Bulandshahr . . .	4,167	3,900	8,067		Small.	
6	Etawah . . .	281	941	1,222		Do.	
7	Karnal . . .	337	81	418		Medium.	
8	Mothra . . .	121	...	121		Small.	
9	Delhi . . .	653	227	880		Medium.	
10	Hissar . . .	534	36	570		Good.	
11	Gurgaon . . .	1,105	163	1,268		Medium.	
12	Moradabad . . .	1,199	1,475	2,674		Small.	
13	Rohtak . . .	895	865	1,760		Good.	
14	Cawnpur . . .	35	1,573	1,608		Small.	
15	Agra . . .	31	44	75		Do.	
16	Budaon . . .	43	81	124		Do.	
17	Bikanir . . .	14	5	19		Medium.	
18	Ulwar . . .	368	57	425		Do.	
19	Jalpur . . .	728	47	775		Do.	
20	Khaltari . . .	168	6	174		Do.	
21	Luharoo . . .	176	55	231		Do.	
22	Patiala . . .	640	170	810		Do.	
23	Dujana . . .	238	93	331		Do.	
24	Patnaudi . . .	152	25	184		Do.	
25	Nahha . . .	105	74	179		Do.	
26	Ferozepur . . .	20	11	40		Good.	
27	Jhind . . .	198	123	321		Medium.	
28	Ludhiana . . .	27	21	48		Good.	
29	Amballa . . .	204	461	665		Medium and small.	
30	Etah . . .	41	1,300	1,341		Small.	
31	Unknown . . .	563	267	830			
32	Mainpuri . . .	14	...	14		Small.	
33	Amritsar . . .	16	23	39		Medium.	
34	Jalandhar . . .	6	...	6		Do.	
35	Dera Ismail Khan . . .	...	437	437		Good.	
36	Shahpur . . .	...	394	394		Do.	
37	Bannu . . .	...	231	231		Do.	
38	Dera Ghazi Khan . . .	...	193	193		Do.	
39	Faridkote . . .	...	40	40		Do.	
40	Gujranwalla . . .	...	11	11		Do.	
TOTAL .		25,325	26,336	51,661			

OXEN.		Cattle of Harriana																
ROHTAK DISTRICT.																		
Gohana Tahsil.																		
		Measurements, etc., of the Harriana breed of cattle, Gohana Tahsil.																
Sex.	Age.	Height at shoulder.	Height at croup.	Height at elbow.	Length.	Length of horn.	Length of ear.	Length of face.	Breadth of forehead.	Girth at chest.	Girth at abdomen.	Girth of forearm.	Girth of shank.	Length of neck.	Length of shank.	Colour of skin.	Colour of hair.	Remarks.
1. Bullock	5 years	58	59	31	48	14	9	22	7	75	84	17½	7	21	6	Black.	White.	Ordinary plough.
2. "	7 "	59	61	32	49	13	10	22	7	78	87	18	8	21	7	"	"	"
3. "	8 "	58	60	31	45	12	9	22	7	75	88	17	7	22	6	"	"	"
4. "	6 "	59	62	31	42	13	10	23	7	79	88	17	7½	23	7	"	"	"
5. "	5 "	58	59	30	42	12	9	23	6½	77	88	17	7	23	7	"	"	"
6. "	8 "	59	60	31	44	10	10	22	7	79	89	17	7	21	7	"	"	"
7. "	5 "	60	62	32	45	8	9	22	7	75	85	17½	7	20	7	"	"	"
8. "	4 "	60	62	31½	46	10	9	21	7	81	93	17	7	22	7	"	"	"
9. "	6 "	61	62	32	46	8	10	23	7½	80	90	17½	7	24	7	"	"	"
10. "	5 "	60	61	31	46	10	12	23	7	79	88	17	7	24	7	"	"	"
11. "	4 "	60	61	31	45	10	10	22	7	78	89	17	7	23	7	"	"	"
12. "	8 "	59	61	31	48	9	10	22	7	78	89	15	6½	22	7	"	"	"
1. Cow	4 "	53	55	30	45	4	6	20	6½	69	80	15	6½	22	7	White.	"	"
2. "	4 "	54	57	29	44	8	9	19	6	70	80	15½	6½	20	7	"	"	"
3. "	6 "	52	55	29	41	8	10	20	6½	66	80	15	6	21	6½	"	"	"
4. "	7 "	51	54	27	42	10	9	20	6	64	79	14½	6	20	6	"	"	"

*Measurements, etc., of the Harriana breed of cattle, Gohana Tahsil.*

Measurements, etc., of the Ordinary Agricultural Bullock, Harriana (Rohtak).

and Sirsa.

(H. T. Pease)

OXEN.

ROHTAK DISTRICT.

Sex.	Age.	Height at shoulder.	Height at croup.	Height at elbow.	Length.	Length of horn.	Length of ear.	Length of face.	Breadth of forehead.	Girth at chest.	Girth at abdomen.	Girth of forearm.	Girth of shank.	Length of neck.	Length of shank.	Colour of skin.	Colour of hair.	Remarks.
1. Bullock.	5	57	56	28	48	13	10	21	7½	77½	91½	16	7½	20	6½	Black	Grey.	Taken at Chhur-chakwas, 18th January 1895. Jhajhar Tahsil.
2. "	5	57	52	28	44	10	10	19	7	72	88½	15	7	22	6½	"	"	
3. "	4	53	50	30	44	11	10	20	8	70	84	14	7	23	6½	"	"	
4. "	4	50	57	28	40	7½	11	19	6	72	85	14	7	20	8	"	"	
5. "	5	55	55	28	39	9	9	20	6	67½	81	13	7	20	6	"	"	
6. "	5	53	53	28	40	9	9	19	6	71	84	14	7	18	6	"	"	

Measurements, etc., of the good Majholti Bullock, Rohtak District.

Sex.	Age.	Height at shoulder.	Height at croup.	Height at elbow.	Length.	Length of horn.	Length of ear.	Length of face.	Breadth of forehead.	Girth at chest.	Girth at abdomen.	Girth of forearm.	Girth of shank.	Length of neck.	Length of shank.	Colour of skin.	Colour of hair.	Remarks.
Bullock	10	62	62	33	50	11	11	23	8	92	93	16	8	22	6	Black	White.	
"	4	61	59	32	47	12	10	21	9	82	93	16	8	24	7	"	"	
"	3½	60	58	31	47	12	10	21	8	82	92	16½	7½	24	6	"	"	
"	7	61	62	30	43	19	12	22	7	78	86	16	7	20	7	"	Grey.	
"	7	60	62	29	43	13	10	21	7	77	84	17½	7	20	7	"	"	

OXEN.		Cattle of Harriana																
ROHTAK DISTRICT.																		
Sampla Tahsil.																		
Rohtak Tahsil.																		
Sex.	Age.	Height at shoulder.	Height at croup.	Height at elbow.	Length.	Length of horn.	Length of ear.	Length of face.	Breadth of forehead.	Girth at chest.	Girth at abdomen.	Girth of forearm.	Girth of shank.	Length of neck.	Length of shank.	Colour of skin.	Colour of hair.	Remarks.
Cart Bullocks, good, Sampla.																		
Bullock	12	58	59	30	45	9	11	23	7	75	85	17	7	23	6	Black	White.	
"	6	59	61	30	44	11	11	22	7	75	84	18	8	23	6	"	Grey.	
"	6	59	62	31	44	10	11	22	7	78	87	18	8	24	7	"	White.	
"	8	60	63	31	48	8	11	23	7	84	96	17	8	23	6	"	"	
"	8	58	60	30	46	14	9	22	7	74	91	18	8	20	6	"	Grey.	
"	7	57	60	31	47	12	10	23	7	77	90	17	8	21	6	"	"	
Measurements, etc., of the Plough Bullocks, Rohtak Tahsil.																		
Bullock	8	53	54	30	46	6	10	20	6	73	87	16	7	20		Black.	Grey.	
"	8	58	59	30	47	15	12	23	7	77	96	17	8	22		"	"	
"	8	57	59	31	47	14	11	23	7	78	96	17	8	22	7	"	"	
"	5	56	58	31	45	7	10	1	7	70	86	17	8	21	7	"	"	
"	8	56	58	30	45	12	10	21	7	70	85	16	8	21	7	"	"	
"	8	57	58	30	49	12	10	22	7	77	94	17	7	22	7	"	"	

and Sirsa. (H. T. Pease.)																		OXEN.
																		ROHTAK DISTRICT.
																		Sampla Tahsil.
																		Rohtak Tahsil.
Sex.	Age.	Height at shoulder.	Height at croup.	Height at elbow.	Length.	Length of horns.	Length of ear.	Length of face.	Breadth at forehead.	Girth at chest.	Girth at abdomen.	Girth of forearm.	Girth of shank.	Length of neck.	Length of shank.	Colour of skin.	Colour of hair.	Remarks.
Bullock	7	56	50	28	42	16	16	20	7	71	86	15 1/2	7	19	6	Black.	White.	
"	6	57	50	28	42	15	21	7	7	72	86	16	7	21	6	"	"	
"	5	54	55	28	41	8	20	6	8	66	76	15	6 1/2	18	6	"	"	
"	4	57	50	30	43	8	21	7	10	73	85	16	7	22	6	"	Grey.	
"	3	57	50	30	44	16	22	7 1/2	10	79	88	17	7	22	6	"	White.	
"	4	56	50	31	44	9	23	7	11	75	85	17	7	23	6	"	Grey.	
Cow	7	57	58	28	38	8	9	10	6	68	81	15	6	19	7	Black.	Grey.	9 seers milk.
"	11	55	54	31	46	8	9	20	7	66	80	16	7	23	7	"	"	8 "
"	5	54	55	30	44	8	8	20	6 1/2	64	79	16	6 1/2	22	7	"	"	8 "
"	5	56	57	31	45	8	9	20	6 1/2	69	81	16	7	22	7	"	"	9 "
"	6	53	55	30	44	10	9	20	6 1/2	67	79	16	7	21	7	"	"	9 "
"	12	51	53	29	36	9	9	19	6 1/2	63	88	15	6	21	6	"	"	10 "
Cow	6	51	55	27	35	9	10	10	5 1/2	64	77	13	6	20	6	"	"	7 seers milk.
"	7	50	51	27	42	9	9	20	6	64	80	13	6 1/2	21	6	"	"	5 "
"	7	53	54	27	42	12	10	21	6 1/2	64	81	14	6 1/2	21	6	"	"	8 "
"	6	51	53	27	43	4	8	19	6	62	80	13	6	20	6	"	"	5 "
"	7	51	53	27	41	8	10	20	6	63	79	14	6	20	6	"	"	7 "
"	4	49	50	26	41	8	9	20	6	62	72	13	6	20	6	"	"	5 "



## OXEN.

## Cattle of Harriana

ROHTAK  
DISTRICT.

*Description of the Cattle.*—Harriana cattle vary somewhat in the different parts of the tract. Those of Jhajjhar, Rohtak, Maham and Hansi are of the best size and quality, the heavier animals being found to the north of Rohtak (Maham) and in Hansi. The cattle in Sampla are smaller may be seen by the measurements, and those of the eastern parts of Gohana are also small compared with the others. Those of Rohtak are perhaps rather smaller as a rule, more active looking, have smaller ears than those seen in Hansi and Hissar. Altogether I consider the good Rohtak and Hansi cattle perhaps more suitable for agricultural purposes than those of Hissar proper. These latter have large ears which hang very loosely and give one the idea of the animal being less active. In general characteristics, however, they are the same. I refer to the ordinary indigenous breed, and not to the *doglas* or mixed breeds seen in the neighbourhood of the Government cattle farm which I look upon as simply mongrel stock.

The indigenous breed is by no means uniform in size or quality as has been already noted. It is astonishing to note the differences even in neighbouring villages. In some the cattle are a good level lot with but few inferior animals amongst them, whilst in others the herd shows great variation containing numbers of different animals. This is most marked in the eastern parts of the Sampla and Gohana tahsils, and is due greatly to the damage done by bad bulls which are driven from other districts and turned loose here. This is the result chiefly of care or carelessness in management and in the provision of suitable bulls, and it proves how very necessary it is to gain a precise knowledge of the conditions which exist in the various villages before taking any steps which might seem to be indicated from a general view of a tract of country for supplying bulls or taking other measures for the improvement of the cattle, neglect in obtaining accurate information has doubtless given rise to errors and unsatisfactory results from the supply of Hissar bulls.

The herds, as has been said, lack uniformity but not in all cases. In most herds the cows vary considerably in size, power and milking qualities, thus we find cows varying in height at the shoulder from 46 to 57 inches in the same herd so that it is difficult to strike an average. It is better perhaps to deal with the good animals to be seen. These are excellent brood stock capable of producing as good agricultural cattle as can be desired are good milkers and mothers. Selecting a typical animal of 50 inches we find the chest measurement 60, girth 81 inches, girth of forearm 16 inches, shank 7 inches. The head is fairly light but coarser than in many other breeds, face long, horn fine and fairly short and carried more or less horizontally, the neck of medium length, light body, longish limbs, clean and strong, feet small, hard and well-shaped, tail fairly short and fine. The skin is rather coarse, thick, altogether the cows look well-bred and active. The udder is fairly capacious, teats regular and well-formed. The milk yield varies from 6 to 12 seers daily. There is a small fold of skin in front of the udder. A series of measurements are appended.

*BULLOCKS.*—The bullocks are the best draught cattle in the Panjab. These may be divided into ordinary plough or draught bullocks and those good enough for *Majholis*, the difference being only in size and quality. They are compact, active, and capable of great endurance. The points chiefly considered by the people are, skin fairly thick, eyes large and intelligent. Sheath should be small and close, horns short and curving upwards, a span in length, short fine tail and good shank measurement. The feet hard, well-shaped and small. All the bullocks, I am sorry to say, do not come up to this standard but a considerable number do so.

and Sirsa.

(H. T. Pease.)

OXEN.

ROHTAK  
DISTRICT.

**BULLS.**—The better class of indigenous bulls are splendid specimens, and it would indeed be a difficult matter to provide more suitable animals for the production of draught cattle such as are required for agricultural purposes. They vary in height but the general thing is about 56 to 60 inches at the shoulder. I consider the most suitable height to be 56 or 57 in the Rohtak district. The head is small and light, comparatively, in the lower parts of the district, but inclined to be coarse towards the north. The horns curving upwards more or less in the form of an arc generally black in colour and generally comparatively short. The forehead broad, the horns well apart. The skin about the orbits and face often wrinkled, there is a considerable dip in the frontal bones giving the forehead a markedly convex shape when viewed in profile. The face is comparatively fine and short, the muzzle cleanly cut. Altogether the head presents a compact appearance. The hump is of considerable size. Dewlap large and hanging in folds. Chest broad, not very deep, but of good girth, the barrel well rounded and not too heavy. Back broad and flat, loins broad and powerful. Tail light, short and fairly well set on. Sheath small and close, but larger than in European cattle, occasionally triangular especially towards the north, arm shapely and of good girth. Feet small, black and hoofs hard. General appearance active. The points looked for by the people are the same as in the bullock.

In disposition these bulls are extremely quiet as a rule and one sees the cowherds lads, little more than children driving them about in the herds. I approached and handled them pretty freely in company with the cowherds and they evinced no disposition to show fight. Unfortunately all the bulls are not of the same excellence and many inferior animals are to be met with.

**COLOUR.**—The colour of the whole of the cattle is pretty uniform, broken colours are seldom, if ever, met with. The skin is usually black or chocolate coloured, the hair grey, darker at the shoulders and neck, and on the flanks sometimes almost black or blue. The bulls have usually a black mantle over the neck, shoulders and flanks and are occasionally dark all over.

**Management.**—In the Rohtak district the cattle are generally kept in open *kraals* named *gawara* formed of the dried thorny bushes of the *jhar-bay* (*Zizyphus nummularia*) situated either immediately outside the village or more frequently close to the house. The cows are driven out to graze on the waste, cultivated fields, or into the jungle, where available, and brought up again at night. In most parts all the cattle receive some *juar* stalks when they are brought in and bullocks and cows in milk get, besides, *binola* or cotton seed and *khall* or cake. They rely for water on the rain water collected in tanks called *johar*, being seldom given well water except at such times as the *johars* dry up. They are not given brackish water and get no salt as a rule. The cows usually have their first calf at about four years and many of them calve in January, February or March. The calves usually are allowed half the milk for four months and are then gradually weaned after which they go out with the herd to graze. Bull calves get boiled *guar* for some time. They are emasculated by the ordinary native method of pulping the testicle at between two or three years of age. The bullocks are generally kept up and stall fed.

**Names given to Cattle.**—Bulls are called *bijhar* in Jhajjhar, *Ankal* and *khagar* in Rohtak and Sampla and often *Angya* by the Ranghars. Oxen up to two years are called *bachra* then *bahra* after which *baladh* until they get old when they are named *dhanda*; cows up to two years *bahri* then *bachi* and *gas*. Cattle are spoken of collectively as *dangur*.

OXEN.	Cattle of Harriana
ROHTAK DISTRICT.	<p><b>Grazing.</b>—The breaking up of jungle land and the consequent curtailment of the grazing area coming under the head of waste or jungle has already been alluded to. Still in some villages of Rohtak the area is fairly extensive. In other parts, however, the village waste is nothing more than an exercise ground, as Dr. Voelker puts it, there being not a blade of grass excepting for a short time during and after the rains. Given good seasonable rain, however, there is no lack of grazing excepting from April to June when the grass is always scanty. On the <i>barani</i> lands where the crops are dependent on the rains and which form perhaps 60 per cent. of the cultivated area in the Rohtak district a good deal of grass chiefly <i>dub</i> is produced on which the cattle can graze. The owner of a field is entitled by custom to graze his own cattle for two or three weeks after the crops are cut, but after this the village cattle graze over it without distinction. The line of sand hills which runs down the eastern side of the Rohtak tahsil and crosses the Jhajhar subdivision obliquely in a south-easterly direction is covered in parts by a sparse growth of <i>dub</i> and other grasses which afford a considerable amount of grazing for countless herds of cattle especially in the southern parts. There are three grass reserves, <i>birs</i>, belonging to Government in the Jhajhar tahsil, one at Sonarwala near Jhajhar, another at Dadri and a third at Chhuchakwas of about 6,000 bighas. Great numbers of cattle are driven to these in the rains. These reserves are a valuable resource in times of dearth and I was pleased to see a good deal of hay stacked in them as a provision against a year of scarcity. Cattle-breeding naturally flourishes in their vicinity as may be gathered from the fact that the small village of Islamgarh which is on the edge of the <i>bir</i> and contains only about sixty houses has about a thousand head of cattle in it. The cattle of twenty villages in the neighbourhood are sent to graze in the <i>bir</i> during the rain, and in ordinary times the cattle of the villages near the <i>bir</i> graze there. In addition to this some villages still have fair stretches of jungle which provide some grazing in their vicinity. I was sorry to see the considerable stretch of jungle at Chandi being broken up. The villages in which there is any jungle have been noted in the appendices showing the distribution of cattle by villages. In times of scarcity cattle are driven to other districts to graze, such as the jungles of Kurnal, the lower part of Amballa, etc.</p> <p><b>Grasses and Fodder Crops.</b>—The best and commonest grass in the district is <i>dub</i> (<i>Cynodon Dactylon</i>) which with a fair rainfall lasts nearly all the year round, it flourishes on the uncultivated fields. Those which spring up during the rains are chiefly <i>anjau</i> (<i>Pennisetum cenchroides</i>) an excellent fodder grass, <i>Lamp</i> (<i>Aristida depressa</i>) good. <i>Palwa</i> (<i>Andropogon Ischaemum</i>), <i>Mukra</i> (<i>Eleusineegyptiaca</i>) and <i>Palenji</i> on <i>barani</i> lands the ordinary crops cultivated are necessarily those which yield a considerable quantity of storeable fodder, namely, <i>juar</i> (<i>Andropogon Sorghum</i>*), <i>bajra</i> (<i>Pennisetum typhoideum</i>) and gram (<i>Cicer arietinum</i>). With a one crop season the crops are said to be distributed on a holding of <math>7\frac{1}{2}</math> cultivated acres approximately as follows, <i>viz.</i>, <i>juar</i> 4 acres, <i>bajra</i> 2 acres and gram <math>1\frac{1}{2}</math> acres, this gives a considerable quantity of fodder which is carefully stored in stacks called <i>chaur</i> or <i>kraals</i> (<i>gatwara</i>) either immediately outside the villages or in the fields in the northern parts of the district. <i>Guar</i> (<i>Cyamopsis psoraloides</i>) appears to be the only crop generally grown specially for cattle. It is sometimes sown with <i>juar</i></p>

\* In Vol. VII., p. 185, Pl. Br. Ind., Sir T. D. Hooker refers this plant to the genus *Andropogon* under the above name which should now be given for the *juar* instead of the familiar *sorghum* and *vulgare*.—Ed.

and Sirsa.

(H. T. Pease.)

OXEN.

ROHTAK  
DISTRICT.

and when the latter is cut some of the *guar* is fed off, the seed of the remainder being collected when ripe and given ground and boiled or mashed to young bullocks and calves. The *bhus* of gram is also used. In irrigated tracts there is also the *bhus* of wheat which is stacked in heaps (*koop*) and fed to cattle, where sugar cane is grown cattle get the leaves and eat a fair quantity also of the cane after the juice has been expressed. The people make great use of the leaves of the *ghar-bar* (*Zizyphus nummularia*). It is named *gobla* when green and growing in the crops and is often cut down when the crop is being removed, the leaves being chopped up with the fodder. The leaves of the bushes in the jungle or fields are beaten off when cut and dried and are collected in bundles and carefully stored, they are fed to cattle under the name of "*pala*" and seem to have a special action in increasing the yield of milk. The thorny bushes are used to form the cattle pens and fodder stores as well as to fence in the cropped fields.—*Pala* sells in times of scarcity at 20 seers and at ordinary times at 2 to 3 maunds the rupee. If fed to excess it produces a skin eruption above the hocks inside the thighs locally known as *jai*. Altogether considerable stores of fodder are to be seen surrounding every village, and every effort seems to have been made to encourage the people to adopt this wise precaution. But although there is this provision, there would probably be still considerable mortality in a fodder famine of any severity owing to the great numbers of cattle present in the district.

**Feeding.**—All cattle receive some stall feeding to supplement the grazing all over the tract. The chief fodders used are *juar*, *pala*, *bhusa*, gram, cake and *binoula*. Cows in milk are better fed than dry cows or bullocks. They get about 12 to 15 seers of *kutti* or chopped *juar* stalks or *bhusa* of gram and wheat or barley mixed with *pala*. A pound or two of cake, *khall*, and about a seer of cotton seed, *binoula*. The favourite mixture all over the country seems to be that named *sani*, it consists of *kutti* in small pieces and *guar* boiled in water, mashed and mixed with it well. If *guar* be not used, *khall* may be soaked in water and mixed with the *kutti* or cotton seed boiled and mixed with it or even ground gram. The amount given differs in towns and villages. In towns perhaps milch cows receive more attention than in the villages. Cows not in milk get three or four *poollas* or small bundles of *juar* stalks thrown down to them when they are tied up for the night.

Bullocks get *sani* or *kutti* and gram and *bhus* with *pala* regularly. It is estimated that to stall feed cattle properly would cost about 4 annas a day each at the following rates:—

*Bhusa* or *juar* and *pala*, 2 annas at 3 maunds per rupee.

Gram . . . . . 1 anna at 32 seers per rupee.

Cotton seed and *khall* . . 1 anna at 16 seers per rupee.

Cotton seed is considered to be heating and is only given during the cold weather, *khall* being substituted in the hot season. The cattle are entirely stall fed during the rains and require less when grass has sprung up after them. I should estimate that the cost of feeding to the zamindar would be about 2 annas a day average.

**Prices of Cattle.**—I gather from the people that cattle have risen considerably in value during the last 20 years, and there appears to be every probability of a further rise as decrease in cattle breeding in other districts continues. The rise may be attributed, to (1) the increased cost in production owing to curtailment of the grazing area due to the grazing grounds and jungle having been brought under cultivation, (2) to increased demand in districts where the production has fallen much below the requirements, (3) to money having become cheaper.

O. 551—94.

B

## OXEN.

## Cattle of Harriana

ROHTAK  
DISTRICT.

There are now few places where cattle have not to be stall fed during some part of the year, and in most places they receive food in addition to what they can pick up grazing all the year round with the exception perhaps of the two months when grass springs up after the rains.

Ordinary good plough bullocks fetch from ₹120 to ₹160 per pair, Majholi bullocks ₹200 to ₹300 per pair, Cows from ₹25 to ₹80, Calves from ₹12 to ₹60 according to quality and age.

**Supply of Bulls.**—In the lower parts of the district in the Jhajjar tahsil efforts were made some years ago to improve the indigenous breed of cattle by the introduction of pure-bred Nagori bulls, and the distribution of these for the use of the villages around Chhuchakwas where the Nawab of Jhajjar had his *aish ban*. Doubtless some improvement in quality was effected by this means, and if the practice had not come to an abrupt conclusion, we should have had more marked results than are to be seen at present. The father of the present Raja Kalyan Singh also imported a small herd of Nagori cattle from Jodhpur into Jahazgarh, and the young bulls turned loose have done some good. The cattle of the following villages are impregnated with Nagori blood, viz., Matanhol, Malikpur, Bharipur, Achaj, Islamgarh, Marot, Gwalisan, Kheri Hoshdar, Bhedawas, Khaparwas, Jahazgarh, Mohamedpurmajra, Palrah, and Kherikumar.

The remains of the herd or a part of it, formerly belonging to the Nawab of Jhajjar, have run wild (*rana dangar*) in the Chhuchakwas *bir*, I managed to get within about forty yards of a herd there. They are fine cattle and have doubtless been joined by some village cattle as well. The bulls have occasionally covered village cows and one of the bulls in the herd at Jahazgarh is the produce of a *rana* bull.

It is stated that in 1883-84 bulls were received from the Government cattle farm at Hissar and turned loose amongst the herds as follows. In the Sampla tahsil 4, Rohtak 3, Jhajjar 4, and Gohana 9. These, it is said, were of the Harriana breed, the only one the people would have. At present there are 14 bulls in the district distributed as follows:—

Gohana 2, Suvana Mall 1, Gaduval 1, Bamvasa 1, Kandhrail 1, Nagor 1, Gaddi Namdar Khan 1 in the Gohana tahsil.

Ballana 1 old, Chuliana 2 old, Kalawar 1 old, in the Sampla tahsil, Patwapur 1, Basana 1 in Rohtak.

I give this distribution as it was given to me, but there appears to be a good deal of uncertainty as to the number and distribution. These three are the efforts which have been made in the district to improve the breed of cattle by the importation of foreign bulls.

**Local or Brahmini Bulls.**—Local bred bulls are those which have already been described. They are turned loose when about a year or more old by Hindus on religious grounds at the death of a relative: they are branded usually with Mahadeo's *trishul* shaped like a trident on one quarter and Vishnu's *chakar* on the other, and from the time they are released remain loose being usually fed by the family who have offered them. They accompany the cows when they go out to graze, and are allowed by the Hindus to feed on the crops in the cultivated fields; as a general rule, the utmost a man does is to drive them off his land if they are eating too much of his crop. They generally come up to the village at night, and when fodder is scarce receive some food from the people. They give little trouble and are usually very docile; many of these bulls are splendid animals and being good specimens of the indigenous breed are in every respect the most suitable animals which could be found to keep up the excellence of the cattle of the tract. In villages where Hindus predominate, especially on *barani* lands there is generally no lack

and Sirsa.	(H. T. Pease.)	OXEN.
<p>of good bulls especially where there are a few wealthy families, but in Ranghar villages there are few: these people relying more on getting their cows covered by the bulls belonging to the neighbouring Hindu or Jat villages. These animals are none too plentiful, as it appears that the custom of turning them loose on religious grounds is falling somewhat into disuse, and it was said that occasionally a village has to subscribe to turn one loose. As cultivation extends and the population increases and becomes more mixed, the liberties allowed to these animals in the way of grazing on cultivated fields naturally become restricted and the people, especially Mahomedans, do not content themselves with simply driving them off their fields, but occasionally use a <i>lathi</i> or a <i>kulhari</i> by way of a persuader. I think that anything which interferes with the provision and maintenance of these animals is to be deprecated, and that any one who voluntarily causes them an injury should be severely punished. It is very evident that if the practice of releasing them cease cattle-breeding must suffer severely, for the provision and maintenance of two or three thousand bulls in district like this if it had to be managed by purchase and stall-feeding would represent a considerable amount of capital. The practice which is the best possible for securing to the villagers a good sire for the village cattle had been allowed so long by custom that it almost amounts to a law, and considering that it is for the general good, and that by means of it alone the country has been provided with cattle and the indigenous cattle been raised to the standard of excellence they have reached, it is a pity that measures should be taken which tend to bring it into disuse.</p> <p>Unfortunately all the Brahmini bulls do not come up to the same standard of excellence; many small animals are found especially in the villages in the eastern part of the district. The reason or one reason for this probably is that the people of the villages in which these animals have been turned loose generally in the neighbouring districts, if they have good cows do not approve of these small bulls, so when they get an opportunity on a dark night they tie them behind a cart and depart them eastward, then turn them loose. I have seen men in the Delhi district taking off three and four bulls at a time to let them loose in the eastern villages of the Rohtak district. This is a very pernicious practice, as the bulls do much harm in the herds to the cultivation. This is also a common practice in the case of bad bulls and there is quite a collection of them at places like Bahadurgarh, Kharkandah, etc. The people would be very good to be relieved of these animals if they could be placed and I believe quite a number would be forthcoming. There are some good specimens amongst them which would be suitable for cows about 44 at the shoulder and of the same type. The following measurements give an idea of the better class of animal alluded to. He stands 50 inches at the shoulder, 51 at the croup, 27 at the elbow, is 40 inches in length, is 71 at the chest, 81 abdomen, girth of forearm is 17 and girth of shank 8 inches, is 10 years old. A sturdy well-built little bull.</p> <p>This system of providing bulls is no doubt open to some objections. In the first place they commence work when they are too young, probably a year before they are fit, (2) unsuitable animals are often turned loose, and are a nuisance. (3) There is no way of getting rid of them when they are old, and past work. (4) The supply is uncertain, and if it fails there is some trouble in obtaining a suitable bull. (5) They are soon worn out and purely on account of the amount of work they do as one bull is considered to be sufficient for one hundred and fifty cows.</p> <p>The people get rid of unsuitable animals by deporting them: as has been stated they can also drive them away from the herds as a rule and</p>		ROHTAK DISTRICT.

## OXEN.

## Cattle of Hariana

ROHTAK  
DISTRICT.

they do so where cattle-breeding flourishes. In some parts bulls are found in excess of the requirements, whilst in others there are not sufficient. The excess is generally found in towns where wealthy Sahucars live and the deficiency in parts where the Hindus are poor and cannot afford to release bulls. Thus at Chhuchakwas with 400 cows, there was only one bull; at Marot with 400 cows there were two; at Kalanour, a Ranghar village, with 1,313 cows there were four; at Lali with over 200, there was no bull, etc.; whilst at Beri and in some of the towns there were great numbers. It is a great pity that there is not more give and take about the people, but certainly assistance is given by neighbouring villages very often. It would be a very good thing if the district authorities could in any way manage to regulate the distribution of these animals and I think it would be managed. But before anything of the kind can be attempted, a more correct knowledge of the distribution of bulls is an absolute necessity and this is one of the points in which the Veterinary Subordinates of the Civil Veterinary Department can be of great use in obtaining information, and I would suggest that these men be directed to invariably note on the following points when they visit a village: (1) class of stock present, good, medium or inferior. Whether more or less uniform in height. (2) Height of the average cows seen. (3) Number of bulls and their class, whether sufficient or not. (4) What grazing is available. (5) Whether the people take interest in cattle-breeding and feed their cattle well. We shall then be able to form some idea of the requirements of the people.

*What must be done in case the supply of Brahmini Bulls fails.*—In case of the failure in supply of Brahmini bulls arrangement will have to be made to ensure the provision of others if cattle breeding is to be carried on. It will become necessary to either supply the animals or to collect sufficient money for the purchase of bulls from the village and impose a small tax for the feeding of bull. This, it is hoped, however, will not become necessary in the tract with which we are at present dealing. I think it is highly advisable, however, to see that every village in the tract has a good herd bull or two if necessary and for protected bulls to be introduced if found desirable for, even at the present day, some villages are badly off for bulls.

and Sirsa.

(H. T. Pease.)

OXEN.

ROHTAK  
DISTRICT.

Measurements, etc., of the Bulls.

Sex.	Age.	Height at shoulder.	Height at croup.	Height at elbow.	Length.	Length of horn.	Length of ear.	Length of face.	Breadth of forehead.	Girth at chest.	Girth at abdomen.	Girth at forearm.	Girth of shank.	Length of neck.	Length of shank.	Colour of skin.	Colour of hair.	Remarks.
Bull at Jahazgarh	7	57	59	30	43	6	10	19	9	77	89	19	9	23	6	Black.	Grey.	Nagori strain.
" at Beri	15	60	62	31	44	12	10	23	11	80	92	21	9	25	7	"	"	"
" at Kalanour	26	58	60	30	43	13	10	22	9	73	84	18	81	26	7	"	"	"
" at "	8	57	59	31	43	9	9	21	94	80	90	20	81	24	7	"	"	"
" at Bahadurgarh	3	58	60	31	45	8	9	22	9	80	89	18	9	20	7	"	"	"
Good bulls at Farmana.	4	58	60	30	44	9	10	22	9	79	87	18	9	20	6	White.	White.	"
" "	5	61	64	32	48	10	10	24	10	85	94	22	9	25	7	Black.	Black.	"
Small bulls at Sampla	10	50	51	27	40	3	6	20	7	71	81	18	8	21	6	"	"	Inferior.

ROHTAK  
DISTRICT.

Measurements, etc., of the Bulls.



## OXEN.

## Cattle of Harriana

ROHTAK  
DISTRICT.

**Government Bulls.**—As has already been stated, some bulls bred at the Government Cattle Farm at Hissar have been distributed in the district with a view to improving the breed of cattle in it. The practice of using them has, however, fallen into disuse. It has been stated by the district authorities that the people do not appreciate them. I have made numerous enquiries into the matter and find that my own opinion coincides with theirs. The Hissar farm established for the purpose of providing heavy draught bullocks for Artillery and Commissariat, works on the system of producing them by cross-breeding and twelve or more herds of cross-bred stock are maintained. No efforts have been made at the farm, so far as I am aware, to establish and perpetuate a separate breed so as to bring it under the claims of being a "special improved breed" suitable for Ordnance or Transport, and the consequence is the cattle seen are almost without exception crosses of various descriptions. The Hissar Farm bred animal, even the so-called pure bred Harriana supplied to the districts, is not more suitable than the ordinary local one, and the people of Harriana district excepting in certain parts of the Hissar tahsil dislike them very much as they have all the faults they consider worst. These are, large loosely hanging ears, large sheath, carcass large, heavy and loosely put together, sprawling feet, besides the appearance of being soft and sluggish. They are also in addition to all this *doglas* or cross bred. Bulls of all the various crosses seem to be obtained indiscriminately from the Hissar farm. We have the following crossed of all degrees to select from (1) Nagore Harriana, (2) Nagore Angole, (3) Nagore Sind, (4) Nagore Gujrat, (5) Mysore Gujrat, (6) Mysore Nagore, (7) Mysore Angole, (8) Gujrat Harriana, (9) Gujrat Nagore, (10) Gujrat Angole, (11) Gujrat Mysore, (12) Nimar Mysore. Doubtless these animals may be useful for the service they are bred to render, but the distribution of such animals in a really good cattle-breeding district is a measure which is open to a good deal of criticism.

What are we to say of the present system if there be any real system at all. Is any one aware of the capabilities of the various portions of the districts with regard to cattle-breeding, the points favourable, class of animals to be found in the different villages, and the like questions of importance in deciding what steps it may be necessary to take with regard to the improvement of the breed of cattle? My own experience tells me no. We then commence operations by introducing a cross-bred animal of not the best quality the produce of two foreign breeds; thus we get such a mixture possibly as Gujrat—Nagore—Harriana or a thorough mongrel as far as strain variety, family and individual type are concerned, although it may be the produce is superior to the indigenous cattle in size and appearance, we cannot say much as to the prospect of improving the breed on these lines. Such a method of procedure is absolutely opposed to all the principles of rational breeding, and by adopting it when dealing with a fairly good breed we are hastening destruction by producing non-descript mongrels. We know as the result of experience that "dashing" a pure bred with a cross bull, no matter how much better he may appear to be, is a dangerous experiment, and one not likely to be attended with very favourable results. What can we think of a mixture of as many different strains of blood as there are drugs in a *hakim's* prescription. I should say that the result of the system in a good breeding district where a renowned race of cattle are already to be found would be more likely to deteriorate than to improve the breed. The natives, as a rule, however, recognise this and do not trouble to get the bulls. The little experience they have had of them shows that the stock got is not nearly so hardy as their own: they say that the stock sit down when half a march is done tired out, that it is *dhila badan* or soft and sluggish and they do not care for it. They usually take

and Sirsa.	(H. T. Pease.)	OXEN.
<p>an early opportunity of getting rid of it as it shows up well when young at the fairs and it commands a good price. As the system is adopted, however, I would most strongly advise that the bulls taken from the farm be only good specimens, and, if possible, those of the Harriana breed with small ears and sheath and not too coarse and heavy. If a cross breed must be taken one half Harriana would be most suitable, such as possibly Gujrat Harriana or Nagore Harriana. I should most certainly avoid other crosses. Probably it will be found that the most suitable cross-bred animal is the Gujrat Harriana of good quality, as the Gujrat seems to nick well with Harriana. I saw a bull of this cross at Kheri Damkan and admired the stock he had got. The people there seem to like the stock as they have kept a good deal of it for their own use, but they say it is not so hardy as their own. In appearance, at any rate, it is good. There is an old Nagore Gujrat bull at Baliana in the Rohtak district; he is an inferior animal, his stock is not good. There is a very inferior Gujrat Harriana bull at Gohana and the people are very much disgusted with it and anxious to get rid of it. There is what is supposed to be a Harriana bull at Kandrai, fair but not a good specimen. It appears that the bulls supplied to districts from the Hissar farm then vary very considerably in quality. I earnestly urge that none but good specimens be sent into good breeding districts. The best plan would be to decide which village the bull is to go to, ascertain the size and quality of cattle there, and then send a competent person to select a bull for them, care being taken that it is not too big and heavy, and in the event of a good, suitable, well bred animal not being offered no bull should be accepted.</p> <p>But for the provision of bulls for the people in this district I am decidedly of the same opinion as Professor Wallace, namely, that by far the safest and least expensive plan of improving cattle is to select the best of the good breeds existing in the separate districts, and while improving these elevate the average of the poorer cattle by a judicious distribution amongst them of bulls of the best blood of their own varieties. By this method, not only the tendency to degeneracy ultimately resulting from cross-breeding would be removed, but the difficulties attaching to climate and soil having been already adjusted, there would be a clear course to improvement by judicious selection and better management. But little can at present be done in this direction. I think it would be a very good plan to secure really good bull-calves, the produce of a good indigenous bull out of a good cow and turn it loose amongst the herds after having branded it.* If prizes were given at the district fairs for yearling or two year old male calves out of really good cows, the produce of bulls known to the zaildars as good ones, no doubt a number could be purchased, and, if arrangements could be made for rearing them properly until three or four years old, they could be turned loose with the Government brand on them and would be appreciated far more than are the bulls at present issued. Possibly the Chhuchakwas <i>bir</i> might in part be used as a rearing farm, but perhaps this would not be necessary, for there is every probability that the people would willingly take really good bull calves and rear them in the same way as they do their own Brahmini bulls. This failing, the establishment of a Government farm should, such as was proposed by the late Colonel Wace, First Financial Commissioner of the Panjab. It is different in districts where the cattle are small and inferior and the people desire to breed larger and heavier cattle, but even in these cases it is doubtful whether more suitable animals could not be obtained for the purpose, for even in such places as Sirsa where the cattle are small and inferior, the <i>desi</i> Harriana bulls are said to be preferred to the Government Hissar bulls and are in my opinion more suitable.</p>		ROHTAK DISTRICT.

\* This plan has since been adopted.

## OXEN.

## Cattle of Harriana

ROHTAK  
DISTRICT.

Where the indigenous cattle are good enough for the purpose of agriculture and command a good price in the market, it seems unnecessary to introduce bulls of any other breed, and if it be desired to really help the people with cattle-breeding and to encourage it more will be done by giving good prizes at cattle fairs and by turning loose the best indigenous young bulls obtainable, and so arranging that each village will have a sufficient number of first class bulls. Spasmodic efforts, such as turning loose a few bulls of foreign breed occasionally, will not do very much good; the subject needs attacking in a thoroughly methodical manner. I know the people would be only too delighted to have good specimens of their own indigenous breed turned loose. There would of course be some difficulty in obtaining young bulls of proper age at present as the people castrate them early. But prizes at fairs would doubtless soon produce a sufficient supply. I found some difficulty in tracing the Government bulls and ascertaining where they are, and when found very little stock was as a rule forthcoming owing to the custom the people have of selling it off when young, but a good deal of that which was seen was very inferior.

**Management of Bulls.**—In breeding districts like this the usual custom is to turn the bulls loose with the village herds. The people consider that it is wrong to tie a bull up and are rather amused at the idea of doing such a thing. I am of opinion that the bulls should be turned loose and am certain that more good is done in this way than could possibly result from tying up. I have given Mr. Blenkinsop's letter No. V, dated 23d March 1892, to the address of the Director of Land Records and Agriculture of the Panjab considerable attention, and have come to the conclusion that the remarks made in it certainly do not apply to this district, and that any action taken in the direction indicated would only tend to make the Hissar bulls more unpopular even than they are at the present time. Seeing how little superior the Hissar bred animal is likely to be to the local bred bull, it does not appear likely that the people would trouble to keep cows up for it in the villages, and I am decidedly not in favour of stall feeding these animals here. Take, for instance for the sake of example, a village with five or six hundred cows, there would be three bulls at least present—1 Hissar and 2 Brahmini. The system is to drive all the cattle out to graze together, the bulls usually separating off with a number of cows. The Hissar bull is tied up, there being no work for him to do in the village. So a man has to be kept to exercise him. The people consider that covering should take place with the animals free, or a state of nature, so that there would be not much chance of his doing much work, and even if the people were willing to use him there would be every chance of the cows being bullied by the Brahmini bulls which are constantly with them. Then comes the question of cost, who is to pay for feed and attendance? It would be obviously unfair to saddle one man with this expense, and the only alternative is either to provide the money from district funds or to raise it in the village by a small tax which would, I am afraid, be a very unpopular measure. The people certainly have no objection to providing food from the *Molha* or village fund for the bull when necessary, but they would certainly not care to spend money in carrying out a measure which they do not agree with nor approve of. There is another point against tying the bulls up. It must be remembered that these animals are bred in a state of freedom and are never tied up at Hissar and consequently if they be subjected to this treatment when sent into the districts they are likely to suffer from the confinement and will not do well. From what I have seen when

and Sirsa.

(H. T. Pease.)

OXEN.

ROHTAK  
DISTRICT.

these animals leave the farm at four years old or so they are in poor condition and will not look at a cow; it is not until they have been free, grazing in the cultivation for a considerable time, six or seven months, that they develop and come in condition. They never develop well when kept tied up as they are at first until they get used to the village. Where does the benefit come in? I do not consider the scheme either advisable or practicable here at present. There are perhaps a few cases in which it might be useful as, for instance, in towns where non-agriculturists keep considerable numbers of good cows for their milk supply. They might be induced to send their cows to a Government bull which is tied up if it be a specially good one. Then by all means tie him up and work him or do anything else that it may be considered necessary. The only question which would arise is that of cost.

I do not altogether agree with some other remarks made by this officer, especially with regard to the animals not being kept fully under control being likely to beget stock which will be more difficult to manage than that get by animals accustomed to restraint. The remark does not apply to cattle in this country as a rule and certainly not to those in the Hissar or Rohtak districts. The general treatment of cattle renders them absurdly quiet; they are in a very high state of domestication. The bulls met with, as a rule, are very quiet and one sees the cow-herd lads petting them and driving them about and to meet with a vicious bull is quite an exceptional occurrence. This strikes one who is used to English bulls which are only safe as a rule when held with a leading rod fixed into a strong nose ring. How many unfortunate men are killed by our bulls owing to the rod coming off and the bulls goring them to death! We seldom hear of such cases in this country. The cows are certainly not wild, so I do not see the application.

Mr. Blenkinsop also remarks that the bulls get insufficient exercise and therefore do not get stock. These animals get far more exercise, being driven out daily to graze and coming up with the cattle in the evening, than does any English bull I know of. It must be remembered that the native method of keeping bulls in use has had an extensive trial, many hundreds of years, and that the cattle bred under the system reached their excellence under it, and that is only of late that native cattle have deteriorated, the reasons for which have been already explained. The reasons to which we may attribute the little effect apparently produced by these animals is that there is a want of continuity of action by the retention of the cow stock and the continued provision of bulls of the same breed in villages when the experiment has been commenced. The stock is early disposed of as calves and goes out of the districts. It is noted that in places where the cattle are small and inferior Hissar bulls are more in request, the reason being that the young stock are larger in size and are sold off early fetching a better price than the indigenous cattle such as Fatehabad and Sirsa and parts of Hissar. But little improvement results as the stock is early disposed of. In the parts where good local cattle exist such as Hansi, Bhiwani, Rohtak, Jhajjhar and Sampla, but few Hissar Farm bulls are used.

*Circumstances adverse to cattle breeding in the tract.*—The chief circumstance adverse to cattle-breeding beyond those already mentioned is the occasional occurrence of a fodder famine, such as must occur in arid districts like this, bordering on the desert. Some historical famines are recorded in the Gazetteer. In 1860-61 the loss of cattle was considerable from starvation. In 1868-69 ninety thousand perished. In 1877-78 the loss of cattle to the agriculturists is said to have amounted, one way or another, to 176,000. In 1884 there was scarcity but no record is available

## OXEN.

## Cattle of Harriana

ROHTAK  
DISTRICT.

to show what number of cattle perished. As much as possible is done to persuade the people to store fodder for cattle against a scarcity, and they certainly do store a considerable quantity, probably enough to see them over one bad year without great loss of cattle. No effort should be neglected to induce the people to maintain a good store, as although the district produces cattle far beyond its requirements we must not lose sight of the fact that there are many districts dependent on the excess production of this tract for their agricultural draught cattle. The insufficiency of the grazing area has already been mentioned.

**Sale of Cows.**—I think every effort should be made to foster cattle-breeding by inducing the people to retain their good cows for breeding purposes. Colonel Rennie, I am informed, did generally advise the people in this matter and attempted to discourage the sale of good cows to butchers at the Jahazgarh fair. I look upon every good cow which leaves a district of this kind as a distinct loss to cattle-breeding. There is a proverb amongst the people that "Harriana cattle leave their district on their own feet, and if they return, it is on the camel's feet, namely, as hides." There are many inferior cows which it would be a benefit to get rid of and they would suit the purposes of the butcher as well as good ones.

**Work done by Agricultural Bullocks.**—Ploughing and preparing the soil is the chief work which falls to the lot of the agricultural stock in this district with the exception of carting. The roads are chiefly unmade and all the produce destined for export has to be conveyed to the railways either to the east and west of the district. The carts are exceptionally large and strongly built, and, as a rule, carry about forty maunds. Four bullocks are employed. They march chiefly at night and in the early morning, resting during the heat of the day. The main road between Bhiwani and Delhi shows at times a constant stream of carts going and returning. Well irrigation is scarcely ever seen, so the bullocks escape this most trying form of labour. In some parts bullocks are sold off when ploughing, etc., are over and fresh ones bought to avoid the expense of stall-feeding necessary owing to lack of grazing, but this is not commonly the case. In the canal villages the bullocks work in the sugar mills during the pressing season. They are always well fed when working and indeed at other times.

**Buffaloes.**—The Harriana buffaloes are almost as celebrated for excellence as are the cattle. They are fine massive animals, the chief characteristic about them being the shape of the horns which are in the better bred ones spirally twisted and small; this shape is known generally in the Panjab as *kundi*. A very great proportion of the animals, however, have the horns of the shape known as *Katchha kundi* in which the twist is imperfectly developed. In the better bred animal the horns are small, black and spirally twisted. They are considered to be the best breed of buffaloes in the Panjab for milking and are consequently valuable. They are massive heavy beasts standing on short powerful legs. This breed has already been described in my report on Panjab cattle. The best of them in the Rohtak district are to be seen in the villages about Nidanah and Butanah where they are kept in great numbers. Butana itself contains nearly a thousand buffalo-cows, the neighbouring villages of Baroda 668, Biehpuri 417, Ahulana 441, Jaysi 690, etc., etc. These animals are more numerous in the northern villages of Gohana and to the eastward, but the distribution of them can be best seen by consulting the village by village census appended. Chikanwas in Hissar is also said to be a good place for them. The people bestow a good deal of care on the breeding of these animals as has already been pointed

and Sirsa.	(H. T. Pease.)	OXEN.
<p>out in previous reports. Good bulls are employed, generally turned loose with the herds as are Brahmini bulls. The people feed them well and value them highly. The young male calves are sold off as soon as possible, the people do not use them for any kind of work and they are reared in a state of semi-starvation, being looked upon as a nuisance. They are sold off to <i>beparis</i> who come round purchasing in the district and who take them northwards where they are employed as draught animals.</p> <p><i>Names.</i>—A male calf is called <i>katra</i> for 2 years, then <i>jhotra</i> till four years after which <i>jhota</i> or <i>bhainsa</i>; females <i>katri</i>, <i>jhotri</i> and <i>bhains</i>; an old one is usually referred to as <i>khola</i>.</p> <p>The cows have their first calf at between 4 and 5 years and go on breeding for 9 or 10 years.</p> <p><i>Yield of Milk.</i>—This varies from 7 to 14 seers a day in ordinary animals, but as much as 20 seers is given by a few buffalo-cows.</p> <p><i>Prices.</i>—Young males are sold for a few rupees and at 4 years they seldom fetch more than ₹30; cows, good, ₹60 to ₹150 according to quality and yield of milk.</p> <p>Measurements as follows :—</p>		<p>ROHTAK DISTRICT.</p>

OXEN.		Cattle of Harriana													
Sex.	Age.	Measurements, etc., of the Harriana breed of Buffalo.													
		Height at shoulder.	Height at croup.	Height at elbow.	Length.	Length of horn.	Length of ear.	Length of face.	Breadth of forehead.	Girth at chest.	Girth at abdomen.	Girth of forearm.	Girth of shank.	Length of neck.	Length of shank.
Remarks.	Colour of hair.	Colour of skin.	Length of shank.	Length of neck.	Girth of shank.	Girth of forearm.	Girth at abdomen.	Girth at chest.	Breadth of forehead.	Length of face.	Length of ear.	Length of horn.	Length of ear.	Length of face.	Breadth of forehead.
	Black.	Black.	5	19	10	19	97	87	8	24	9	19	9	24	8
	"	"	5	19	10	20	103	92	7	23	8	17	8	23	7
	"	"	12	25	10	16	110	102	9	20	12	15	12	20	9
Buffalo-cow	10 years	55	56	29	48	19	48	29	55	53	55	27	41	17	45
"	5 "	53	55	27	41	17	41	27	53	53	55	27	41	17	45
"	3 "	53	52	28	45	15	45	28	53	53	52	28	45	15	45

and Sirsa.

(H. T. Pease.)

OXEN.

## HISSAR DISTRICT—SIRSA CATTLE.

HISSAR  
DISTRICT.

**General Remarks.**—The area of this tract is 3,416 square miles, of which 76 per cent. is cultivated, 19 per cent. culturable and 5 per cent. barren. It is divided into three zones, the Bagar, Harriana and the Nali, corresponding to distribution of the soil to which the description sand, loam and clay generally apply.

THE BAGAR TRACT borders on the Bikanir desert and varies from pure sandhills to soil containing a fair proportion of loam. Nearly all the cropping of the Bagar is done in the *khari* season.

THE HARRIANA TRACT constitutes the main portion of the district, including the eastern portion of Bhiwani, the whole of Hansi, the greater portion of Hissar and one circle of Fatehabad. It is a dead level of good soil, with here and there a patch of clay and here and there a sandhill. Here too the *khari* is the most important crop, but to a less extent than in the Bagar.

THE NALI TRACT, which is situated in the north of the Fatehabad tahsil, is characterized by a clay soil. It includes the villages liable to inundation from the Ghaggar and Joya streams.

The average rainfall is 16 inches and the climate is generally dry and well suited for cattle.

**Grasses.**—The grasses are a very important part of the vegetation of the district, having regard to the great number of cattle possessed by the zamindars. The best grass for fodder is the renowned *dhaman* (*Pennisetum cenchroides*). It has a long and broad blade, and is generally found in good soil which has not yet been brought under the plough. Unfortunately the spread of cultivation has rendered it scarce, but it is still common in the Hissar *div* and is often found in other parts of the district growing amongst the roots of kair bushes, especially in the Nali tract. The *anjan* (*Cenchrus montanus*) is also found; it much resembles *dhaman*.

The commonest grass is the *Ghautile* (*Eleusine flagellifera*) a small creeping perennial grass common on moist sandy soil. It is good fodder and is readily eaten by cattle. The *bhobra* (*Eleusine scindica*) is also common and is a good fodder grass.

*Dubb* (*Cynodon Dactylon*) is very common in the firmer soils of the district, and is especially abundant in the hard clay of the Sotar, but is not uncommon even in sandy soils. It supplies excellent fodder for cattle and in some places it is made into hay in the lower parts of the district. The *sanwal* (*Panicum colonum*) a dark-green grass with a broad blade, grows only on the hard Sotar clay; it is a very excellent fodder grass, but will not grow well on poor soil. The *dur* or *khari* (*Andropogon laniger*) is a common grass, and is nutritious fodder, especially when young. It is a jungle grass and tints the ground red when it is ripe. The *sewan* or *sani* (*Elyonurus hirsutus*) is commonly found in the Bagar and is especially plentiful in Bikanir. It supplies excellent fodder when young. The *palwa* or *parwa* (*Andropogon pertusus*) is also found and is good for grazing. *Sarkarda* or *sarr* (*Saccharum ciliare*) and the *panni* (*Andropogon muricatus*) seem to be not uncommon in the sandy parts of the district.

*Kaundra*, *didhan* and *chaupara* are three grasses or weeds which spring up in great abundance upon the first fall of rain and are largely used as green fodder for cattle. *Baru* (*Andropogon Sorghum* var. *halapensis* \*) and *takria* are two other common grasses which supply fodder. *Ghamur*

See footnote on page 16.

O. 551—94.



## OXEN.

## Cattle of Harriana

HISSAR  
DISTRICT.

(*Panicum antidotale*) is a grass with a long thin stalk very common near the canal. It is only grazed when young. The *keo* grass (*Sporobolus orientalis*) is found on sandhills and resembles *palejji*; it is good for grazing.

*Duchab* (*Cyperus* sp.) is common on the Bagar sandhills and on poor soil. It has long spreading roots and is grazed by cattle. The *Bhart* (*Cenchrus catharticus*) is very common on the sandy soil of Bagar, and *motya* is a common grass in the valleys of the Bagar where it springs up after the first rains.

According to Colonel Grey the assets of the Hissar district consist largely in cattle. The profits made from these will diminish as the cultivation of waste land increases. The greatest grazing tract is in the Nali circle; it belongs chiefly to Rajputs and Pachhadass who prefer cattle breeding to cultivation. In the Amrain and other Bagar tracts the people would not be able to maintain themselves and pay the revenue if it were not for their cattle.

The following remarks regarding waste are interesting:—

**Grazing and Assessment of waste.**—In the settlement of 1863, a fourth of the total area of each village was exempted from assessment to provide pasturage for cattle required for agricultural purposes; and if there was not sufficient waste the area was made up from cultivation. But in the present settlement only so much of the waste was unassessed as was equal in area to  $\frac{1}{4}$ th the cultivation, and when waste was less than this area the difference was not made up from cultivation. The rates on excess waste in 1863 were one anna in the Bagar and Harriana circles and one anna and a half in the Nali. In the Barwala and Fatehabad tahsils where the waste was extensive, the assessment on it amounted to one-seventh of the whole; but cultivation has increased and there are few large blocks of waste; so that while landlords try to collect the same grazing dues as before, there is much opposition from the tenants and in some places the dues have been reduced, and in others grazing is now free.

The rates recommended in the Preliminary Report were half an anna in the Bagar tracts, an anna in the Harriana, including the Eastern Bagar of Fatehabad and an anna and a half in the Nali circles; and it was noted that in exceptional cases where the waste was deliberately devoted to grazing and the profits were large, the assessment should be above the rates. The waste in the Bagar is always poor and in many parts will not produce even the *phog*. It is better in the Harriana, and in the Nali are the best grazing tracts and also the largest profits.

Droves of cattle are brought from long distances to the Nali circle where between  $\frac{1}{2}$  and  $\frac{1}{4}$  is still waste and dues are paid which would justify a revenue of 2 annas per acre. Resident tenants pay one rupee per buffalo, 8 annas per cow or young buffalo, 4 annas for a calf, and half these rates when the waste is small. Plough bullocks are always exempted. In some villages a charge is also made for the right to cut *pala* bushes which in a fair season produce 60 seers of fodder per acre valued at 5 annas.

The Nali rate was raised to 2 annas, in order to intercept a fair proportion of the profits made by Pachhadass in whose villages large areas of waste still remain. But he laid down that these rates should be applied only to villages which have extended their cultivation and rely mainly upon it, but that where the whole or a large proportion of a village has been devoted to pasture the assessment should approach actual half assets. In the Barwala Nali, where waste is extensive, the assessment is

and Sirsa. (H. T. Pease.)	OXEN.
somewhat in excess of the sanctioned rules and this is in part due to the full assessment of waste—	HISSAR DISTRICT.

	Waste.	Percentage.
Bhiwani . . . . .	86,356	18
Hansi . . . . .	71,338	14
Hissar . . . . .	86,207	18
Fatehabad . . . . .	159,743	22

The waste in Bhiwani is chiefly in the Bagar and is poor and sandy.

The waste in Hansi is small as compared with other tahsils, but still there are several villages which have kept land waste for grazing purposes. An area of 7,905 or one-ninth of the whole waste is in five villages. In Hissar there is only one prominent village. Almost one-fourth of the whole of Fatehabad tahsil is still waste. In the Nali the waste is excessive, progress in the Nali with regard to cultivation and cattle has been great since 1863.

	Cattle.	
	1863.	1890.
Chak Borani Nali . . . . .	100	172
Sotar Nali . . . . .	100	152
Tohanas Bar Nali . . . . .	100	205
Sotar Nali . . . . .	100	205

The Amrain Bagar is a sea of sand hills. But for the cattle the people here would not be able to maintain themselves and pay the revenue. The principal crops are *bajra*, *moth*, *mung* and also some *juar*, which is used as fodder for cattle, and large profits are made from cattle-breeding and hiring out camels for transport.

**Cattle-breeding.**—As in Rohtak so in the lower parts of the Hissar district and especially in the Harriana tract cattle-breeding is decidedly being steadily pushed out by the extension of cultivation. The people in many parts of the southern districts are now becoming more dealers than breeders, buying bullocks largely in March at the fair for agricultural purposes and selling them off as soon as they are no longer required. This is especially the case in parts of the Hissar district near the Sadr, and I visited several villages where it was the custom. I have mentioned on many occasions that the reason for this custom is that it is cheaper to buy and sell than to breed and rear, and when such a custom prevails the breeding of cattle is, as an industry, doomed.

The general management of cattle in this district differs but little from that adopted in the Rohtak district. It seems, however, to be more customary if there is a good rainfall in the west to drive great numbers of cattle into the prairies of Bikanir, where extensive and good grazing is obtained (see Sirsa).

**Cattle Fairs.**—There is a considerable amount of cattle trade in the district which will always act as a healthy stimulus to breeding and will tend more to keep it alive than anything else. The fairs at Hissar and Bhiwani as well as those of Sirsa and Jahazgarh and many in the adjoining Ryasat of Jhind are well attended by Baiparis and Banjaras, so that the people have little difficulty in getting rid of any class of cattle. They find a ready market for calves of all ages and for adult stock, both large and small.

At these fairs the great majority of the animals sold are bullocks at the spring fair, and the greater proportion is young stock at the autumn fairs. This suits the people very well for the rearing of cattle in an arid tract like this, subject, as it is, to periodical scarceness of the fodder supply, the rearing of animals is always a precarious undertaking, and this is naturally more so since cultivation has extended and rearing is accompanied

OXEN.

Cattle of Harriana

HISSAR DISTRICT.

with more expenditure and risk than formerly, so that it pays better to get rid of the stock bred, at an early stage of their existence. The young stock goes to the North-Western Provinces, chiefly to those tracts where there is good grazing. The number of cattle sold therefore and the average prices realised depend to a great extent on the nature of the season. If there be an anticipated scarcity of fodder the number will be great and the prices correspondingly low. On the other hand, if there be every prospect of a good fodder season, people hang on to their stock for a longer time in order to realise the enhanced price which comes with increase in size and age. If there be a bad season in the North-Western Provinces, the demand from that quarter, which is an important factor in the success of the fairs, is reduced. When cattle plagues have been especially prevalent there the demand for adult stock is much greater to replace the losses which have occurred at the fairs in Phagun and Chait (February and March), there is a greater local demand than at those in Bhadon and Asauj (August and September) as cattle have to be bought at the former for the *kharif* and *rabi* ploughings and, as has been already stated, many of the bullocks purchased are resold at the later fairs. In addition to the local supply available for sale at these fairs many cattle are brought from the neighbouring Rajputana States and sold. The Harriana-bred cattle are bought for the North-Western Provinces and Panjab districts (see Jehazgarh fair).

It is estimated that about 15,000 animals change hands at each fair at Hissar representing an exchange of about four lakhs of rupees, of which about five lakhs annually come into the district. The following statistics show the number of sales and average prices realized :—

Fair.	Sold.	Value.	Average.
1890.		R	
Spring . . . . .	17,372	3,79,584	21'3
Autumn . . . . .	14,935	4,41,728	29'3
1891.			
Spring . . . . .	16,812	4,46,784	26'5
Autumn . . . . .	17,181	4,27,580	24'8

The following are the statistics in connection with the fair :—

HISSAR SPRING CATTLE FAIR, 1895.

Statement showing the total number of animals sold, amount changed hands and amount realised from fees at Hissar Spring Cattle Fair, 1895.

Serial No.	Class.	Number present.	Number sold.	Amount changed hands.	Amount realized from fees.	Average price of animals sold.	Total amount awarded in prizes by Government.	Total amount awarded by District Board.
				R a. p.	R a. p.	R a. p.	R a. p.	R a. p.
1	Cattle	21,850	16,545	4,19,166 0 0	6,549 7 6	25 5 4	...	63 0 0

and Sirsa.			(H. T. Pease.)		OXEN.
HISSAR AUTUMN CATTLE FAIR, 1895.					
Statement showing the names of the districts from which the cattle sold at the Fair were brought.					
Serial No.	Name of Districts.	Number of cattle sold.	Young or adult.		REMARKS.
			Young.	Adult.	
					Breeds.
1	Hissar . . .	11,412	507	10,905	Harriana.
2	Bikanir . . .	3,387	203	3,124	Bikanir.
3	Lahore . . .	1,008	210	798	Manja.
4	Jhind . . .	572	9	563	Bagar.
5	Jodhpur . . .	504	11	493	Nagori.
6	Jeypur . . .	423	13	410	Marwari.
7	Patiala . . .	380	15	365	Malwa and Jangal.
8	Rohtak . . .	250	15	244	Harriana.
TOTAL .		17,945	1,043	16,902	

Statement showing the districts to which the cattle, including buffaloes purchased at the Fair, were taken.

Serial No.	Name of Districts.	NUMBER OF CATTLE PURCHASED.			Class.	By dealers or breeders.	REMARKS.
		Adult.	Young.	Total.			
1	Meerut . . .	1,359	166	1,525	Harriana.	Both.	
2	Muzaffarnagar . . .	1,114	113	1,227	Ditto.		
3	Saharanpur . . .	1,340	105	1,445	Ditto.		
4	Aligarh . . .	1,112	19	1,131	Bikanir and Bagar.		
5	Bulandshahr . . .	1,193	68	1,261	Same.		
6	Delhi . . .	785	35	820	Harriana.		
7	Bijnour . . .	706	...	706	Small.		
8	Kurnal . . .	653	87	740	Harriana.		
9	Unbala . . .	886	24	910	Harriana small.		
10	Jullandhur . . .	504	...	504	Harriana.		
11	Patiala . . .	522	15	537	Ditto.		
12	Ludhiana . . .	588	18	606	Ditto.		
13	Ferozepur . . .	482	23	505	Ditto.		
14	Gurdaspur . . .	409	127	626	Bagar.		
15	Gurmukhteswar . . .	295	...	296	Harriana.		
16	Faridkot . . .	911	...	911	Ditto.		
17	Jhind . . .	402	39	441	Ditto.		
18	Hoshiarpur . . .	461	19	480	Bagar.		
19	Nabha . . .	486	32	518	Harriana.		
20	Amritsar . . .	385	13	398	Jangal.		
21	Rohtak . . .	780	21	800	Harriana.		
22	Bikanir . . .	169	6	175	Ditto.		
23	Hissar . . .	646	65	711	Nagorian and Harriana.		
24	Barilly . . .	554	43	602	Bagar.		
TOTAL .		16,902	1,043	17,945			

## OXEN.

## Cattle of Harriana

HISSAR  
DISTRICT.

Statement showing total number of Villages and Cattle in each Tahsil, area in acres (cultivated and non-cultivated) in the District of Hissar.

Tahsils.	Number of villages.	Area in acres.		Number of Cattle.					
				Total in	Number of Bulls.	Number of Cows in		Number of Bullocks in	
		Cultivated in	Non-cultivated in			1890-91.	1891-92.	1892-93.	1893-94.
Bulwadi,	132	384,190	415,559	410,215	95,571	64,141	63,465	476,791	476,791
Hansi	138	413,279	434,359	437,187	97,676	86,838	84,080	511,355	511,357
Hissar	136	370,481	394,471	396,696	138,802	124,096	121,871	518,173	518,547
Pattahad	275	553,090	581,105	584,331	93,477	173,446	170,312	754,576	754,543
Sirsa	325	801,191	823,776	820,197	235,632	231,016	236,483	1,055,323	1,055,679
Total, 1,000	...	1,609,272	1,644,556	...	661,586	676,210	...	1,230,853	1,230,736

\* Includes Bullocks and Calves also.  
\* Includes Bullock Calves also.

O. 551-94.

and Sirsa	(H. T. Pease.)	OXEN.
<p><b>Hansi Tahsil.</b>—The cattle of Hansi offer no differences from those seen in the northern part of the Rohtak district. They are perhaps a little bigger, coarser and more uniform in size, and the herds thus present less irregularity. The largest and heaviest animals in the Harriana tract are bred in this tahsil, many animals of over 60 inches at the shoulder being met with. The conditions under which they are kept do not differ markedly from those already mentioned, so that it is unnecessary to go over the whole ground again. I reproduce here Major Marrett's description as applied to the cattle of Hissar and Hansi, from which it will be seen that the differences are not marked, if there be any. "The colour of Harriana bulls and bullocks is slate (grey), lighter on the ribs, and darker on the neck, shoulder, and flanks; pure white is sometimes met with. The height of the bulls measured behind the hump is from 56 to 64 inches, back wide and straight from behind the hump to the setting on of the tail. The tail is fine and of moderate length, terminating in a tuft of black hair. The barrel is good, the animals being well ribbed up. Tail fairly well put on, but as a rule there is a tendency to droop at the quarters. The thighs are well let down, and the legs well shaped with good bone measurement, which is generally 15 to 21 inches round the elbow and between 7 and 9 inches round the cannon bones. The dewlap in the bull is fairly well developed, extending from the chin to the sternum. The chest is round and deep; the girth measurement just behind the hump ranges from 60 to 72 inches. The head is coarse. The ears are of moderate size and drooping (more so than in the Rohtak district and longer). Horns of moderate thickness and from 12 to 16 inches in length. The feet are usually black and well shaped. The bulls are generally free from vice.</p> <p><b>Cows.</b>—The description of the oxen applies generally to the cows, but they are of course lighter in build. They have their first calf at between three or four years old, and as a rule make good mothers. They give from 8 to 12 seers of milk.</p> <p>The general management of the cattle is the same as in Rohtak.</p> <p><b>Prices.</b>—Good cows fetch from 40 to 80 rupees; good plough bullocks from 120 to 140 rupees per pair. The accompanying village census of the cattle will give a good idea as to the distribution. The people trust to their own bulls, there being only one Hissar Farm bull in the tahsil. I regret that I am unable to give any records of disease in the Hansi tahsil, but the veterinary assistant is entirely ignorant regarding cattle disease and can neither read nor write so no records were forthcoming. I saw only foot and mouth disease. The accompanying form gives the comparative numbers of cattle in the tract and area of land cultivated and uncultivated.</p> <p><b>Bhiwani.</b>—The cattle seen in the Bhiwani tahsil as far as Tosham are of the ordinary Harriana breed. The tahsil beyond Bhiwani and Tosham is comprised in the tract known as the Bagar. The soil is sandy. Here cattle give way to camels for agricultural work, and consequently are of secondary consideration for draught purposes. The cattle raised on this tract are far smaller than Harriana cattle are and come under the heading of "Bagar" cattle. The people consequently keep cows for breeding and milking, and derive large profits from the sale of their young stock, and are bred for sale. The production is greatly in excess of requirements, the excess being sold off to Banjaras who usually travel round the villages purchasing. They come from the Jamnapar and buy for the most part young stock. The poorer people sell off their stock early at about a year, but those who are able, keep them until they are 2½ to 3 years old. There is a considerable amount of waste land, and given</p>		<p>HISSAR DISTRICT. Hansi Tahsil.</p>
<p><b>Bhiwani.</b>—The cattle seen in the Bhiwani tahsil as far as Tosham are of the ordinary Harriana breed. The tahsil beyond Bhiwani and Tosham is comprised in the tract known as the Bagar. The soil is sandy. Here cattle give way to camels for agricultural work, and consequently are of secondary consideration for draught purposes. The cattle raised on this tract are far smaller than Harriana cattle are and come under the heading of "Bagar" cattle. The people consequently keep cows for breeding and milking, and derive large profits from the sale of their young stock, and are bred for sale. The production is greatly in excess of requirements, the excess being sold off to Banjaras who usually travel round the villages purchasing. They come from the Jamnapar and buy for the most part young stock. The poorer people sell off their stock early at about a year, but those who are able, keep them until they are 2½ to 3 years old. There is a considerable amount of waste land, and given</p>		<p>Bhiwani Tahsil.</p>

## OXEN.

## Cattle of Harriana

HISSAR  
DISTRICT.  
Bhiwani  
Tahsil.

good rain, a fair amount of grazing in such villages as Kairu, Sivana, Shandowa, etc. Good cattle are found in Tnsham, Kairu, Bapara, Bamla, Devsar, Dinod, and Chang. The people store fodder in considerable quantity, but in times of scarcity when this is consumed drive off their cattle into Bikanir. The income from cultivation here is not great and the people look to their cattle to help to pay the revenue and to maintain them. They do not require the Hissar bulls; they prefer their own. There is only one Hissar bull in the Tahsil. The general management, etc., of cattle is as in Rohtak and Hansi. There is some difference in the names given to cattle—a bull calf  $1\frac{1}{2}$  years old is "Khurch," at 2½ years it is named "Bahra" or "Dogya;" a cow is named Tandī and a bullock Tanda.

The people are careless as to the provision of good bulls in this tahsil, and they do not appear to give much attention to the improvement of their stock, as will be seen from the measurement of the bulls given.

**Prices.**—Ordinary bullocks fetch ₹30 to ₹50, small ₹20 to ₹30, ordinary cow ₹20 to ₹25, a good cow, ₹35 to ₹40, bull-calf, 2 years, ₹20 to ₹25: measurements given.

The accompanying statement shows the distribution of the cattle. Cattle disease is not common.

## Cattle Fair.

A large cattle fair is now held at Bhiwani in the autumn. It has only been started for a few years, but is making wonderful progress. The class of cattle met with here is about the same as that seen in Hissar. Purchasers attend in great numbers. The following are the available figures connected with the fair:—

## BHIWANI AUTUMN CATTLE FAIR, 1895.

*Statement showing the names of the districts from which the cattle sold at the Fair were brought.*

Serial No.	Name of Districts.	Number of cattle sold.	Young or adult.	REMARKS.
				Breeds.
1	Hissar . . .			Harriana.
2	Rohtak . . .			Ditto
3	Jhind . . .		2,970	Young Bagar.
4	Loharu . . .	10,288	7,318	Adults do.
5	Jeypur . . .			Marwari.
6	Ulwar . . .			Mewati.
7	Bikanir . . .			Bikanir.

## BHIWANI AUTUMN CATTLE FAIR, 1895.

Statement showing the districts to which the cattle, including buffaloes purchased at the Fair, were taken.

Serial No.	Name of District.	NUMBER OF CATTLE PURCHASED.			Class.	By dealers or breeders.	REMARKS.
		Adult.	Young.	Total.			
1	Meerut		Both				The dealers of Muzaffargarh, Bagair, Bolandshahr, Meerut, and Delhi districts bought the greater number of cattle.
2	Muzaffargarh		Do.				
3	Bolandshahr		Do.				
4	Meerut		Do.				
5	Delhi		Do.				
6	Rohitak		Do.				
7	Gurgaon		Do.				
8	Umballa		Do.				
9	Patiala	7,318	2,970	10,288	All kinds	By dealers 16,000, By breeders 288.	
10	Imliana	Adult					
11	Budlaon	Do.	Young				
12	Gwalior	Do.	Do.				
13	Dijana		Both				
14	Jalandhar	Adult					
15	Meerut		Young				
16	Mathra		Do.				
17	Saharanpur		Both				
18	Ludhiana	Adult					

HISSAR DISTRICT.  
Bhiwani Tahsil.





Measurements, etc., of Bhiwani Cattle.

and Sirsa.

(H. T. Pease.)

OXEN.

HISSAR  
DISTRICT,  
Tahsil.

Sex.	Age.	Height at shoulder.	Height at croup.	Height at elbow.	Length.	Length of horn.	Length of ear.	Length of face.	Breadth of forehead.	Girth at chest.	Girth at abdomen.	Girth of forearm.	Girth of shank.	Length of neck.	Length of shank.	Colour of skin.	Colour of hair.	Remarks.
1 Bullock	5 years	58	59	27	33	7	10	16	7	79	81	12	7	20	7	White	Grey	Majholi bullock, Bhiwani.
2 "	4 "	50	57	28	33	7	10	17	8	82	79	12	7	21	10	"	"	Ditto ditto.
3 "	5 "	52	53	29	32	7	11	19	9	89	102	13	9	22	10	Black	Black	Ordinary plough bullock, Bhiwani.
4 "	4 "	51	52	30	31	7	10	19	9	86	93	13	9	21	10	White	Grey	Ditto ditto.
5 "	5 "	52	53	29	32	7	11	19	9	91	94	13	9	22	10	Black	"	Ditto ditto.
1 Bull	5 years	58	59	35	38	6	11	19	9	92	100	15	9	23	11	Black	Black	Bhiwani.
2 "	5 "	50	56	31	34	6	11	18	9	87	100	15	10	21	11	"	Grey	Ditto.
3 "	6 "	51	52	30	34	6	11	17	9	83	97	13	8	20	10	"	"	Rapura.
4 "	5 "	52	53	31	34	11	10	18	9	84	93	12	8	21	11	"	"	Tosham.
5 "	5 "	50	51	30	32	12	11	17	9	83	94	11	8	20	11	"	"	Bhiwani.
1 Cow	5 years	44	43	22	32	6	6	15	6	65	76	11	6	20	8	Black	Grey	Ordinary Tosham.
2 "	5 "	43	42	21	30	6	6	14	6	64	75	11	6	20	8	"	White	Ditto.
3 "	6 "	42	41	20	29	6	6	13	6	64	73	11	6	19	7	"	Grey	Ditto, Bhiwani.
4 "	5 "	46	46	23	31	11	10	13	8	74	86	12	7	21	12	White	White	Superior kind, Tosham.
5 "	5 "	47	47	24	32	11	10	16	8	73	85	12	7	20	12	Black	"	Ditto, Bhiwani.
6 "	5 "	48	47	22	33	11	10	15	8	70	85	12	7	19	12	"	"	Ditto ditto.
1 Cow	6 years	48	47	27	30	7	10	13	6	58	84	11	6	16	9	White	Black	Common, Tosham.
2 "	6 "	52	54	28	33	11	10	19	6	63	66	11	7	15	8	"	White	Ditto ditto.

HISSAR  
DISTRICT.  
Tahsil.

OXEN.	Cattle of Harriana
<p>HISSAR DISTRICT.</p>	<p><i>Hissar.</i>—The cattle in many parts of Hissar offer no differences from those already described. Towards Fatehabad they grow smaller and inferior. Those towards the south and farthest removed from the Government cattle farm are perhaps the best. The influence of the cattle farm has been peculiar. The people in the surrounding villages possess animals of all kinds of breeds mixed up. They seem to be more dealers than breeders, and seldom have any bulls. They buy stock to rear, very often trusting to the <i>bir</i> for grazing to some extent. It is a remarkable fact that Hissar town with all its cows does not possess a decent bull, for I quite expected to find the cattle here better than in any other part. The people seem very much discontented about their cattle, complaining that there is absolutely no grazing; they say "<i>agar ek taraf janwar munh marta nahrawala pakarta,</i>" "<i>aur agar dusri taraf munh marta bir wala pakarta.</i>" I saw one Gujrat Harriana bull at Babalpur, a good one, but the people deal and sell off everything, so that not much effect is noticeable. They like the bull. The whole of the cattle seen in the tahsil were in very poor condition, owing to failure of the rains and consequent lack of fodder and forage which is reaching famine prices. There is little grazing in the "<i>bir</i>" of the Government cattle farm, and the animals seen there were almost poorer than the village cattle. It is a bad time to judge of the capacities or numbers of cattle, as the majority have been sent away from many villages to other parts for grazing.</p> <p><i>Hissar Cattle Farm.</i>—I visited the Hissar Cattle Farm on Saturday, the 16th January 1895, with a view to seeing the bulls destined for districts. Unfortunately those for the year had been distributed. Major Marrett kindly had the young male stock kept up for me to see. The only class of cross met with then, which I consider suitable for distribution to the Harriana districts, is Gujrat Harriana. Well selected animals of this breed are the most suitable, but in selecting them the following points should be observed. They should not be too heavy; not more, as a rule, than 56 or 57 inches at the shoulder, with small ears, short fine tails, sheath as close as possible, and hard black feet compact and active; pure bred Harriana bulls well selected are very suitable. The stock seen was all young and in rather poor condition, so did not appear to the best advantage.</p>

and Sirsa.	(H. T. P <sub>01122</sub> .)	OXEN.
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SIRSA TAHSIL.

**Physical characters.**—As they are occasionally referred to. The following divisions of the belts forming the district made with reference to physical characteristics are given :—

- (1) The Bagar, the sandy tract south of the Ghaggar valley, characterized by the lightness of the soil, and the prevalence of shifting sand hills. It is considered by the people a part of the great Bagar tract which includes a part of the south-west of the Hissar district and almost the whole of the Bikanir territory.
- (2) The Nali or Ghaggar valley, including the Sotar valley, with its hard, alluvial clay soil and the present valley of the Ghaggar with the villages enclosed between the two valleys and the neighbouring high land belonging to the Ghaggar villages or lying between them and the boundary of the district. These high lands are exactly similar on the one side of the sandy soil of the Bagar, and on the other side to the loam of the Rohi.
- (3) The Rohi or great dry tract, stretching from the Ghaggar valley to the Danda or old bank of the Satlej, and known as the Rohi or Jangal.
- (4) The Utar or upper belt between the Danda and the present Satlej valley, a tract of light sandy soil with an admixture of river sand now beyond the reach of the Satlej floods.
- (5) The Hitar or lower belt of alluvial soil subject to inundation.

At last settlement the area of land still uncultivated was returned as 13,21,618 acres or 66 per cent. of the total area, and now, according to the measurement of the present settlement, the uncultivated area is only 8,56,622 acres or 45 per cent. of the area. The culturable area not yet brought under the plough is as follows :—

	Total.	Uncultivated total area.
Bagar 38,302 or 22 % . . . . .	48,202	1,72,809
Nali 1,31,661 „ 39 % . . . . .	1,55,876	5,41,639
Rohi 5,33,095 „ 43 % . . . . .	5,80,552	12,31,900
Utar 58,716 „ 51 % . . . . .	61,850	1,15,668
Hitar 23,191 „ 38 % . . . . .	35,125	60,372

Practically, the whole of this area, say 8 lakhs of acres, is available for cultivation and little inferior in productive capacity to much of the land already cultivated. Meanwhile, it annually produces abundance of grasses of all kinds in the rains and affords food to great numbers of cattle.

**Grasses.**—Of all the natural products of the district, the most important are the grasses which formerly covered the whole country and still abound in good seasons on the land which has not yet been brought under the plough. In the dry tract perhaps the best grass is the *dhaman* (*Pennisetum cenchroides*), a tall grass with a succulent stem, much valued as food for cattle, and often preserved as hay. It is common in the pasture grounds of Bikanir, and seems to have been formerly common in this district, but it was one of the first grasses to give way before the

## OXEN.

## Cattle of Hariana

HISSAR  
DISTRICT.  
Sirsa Tahsil.

plough, as it grew on the best lands which were first brought under cultivation. It is now somewhat rare; among the commonest grasses is the *chimbár* or *kharunbur* (*Elysiene flagellifera*) a shorter grass readily eaten by cattle; this grass is called by the Bagris *ganthil* or *bhobriya*. Another common grass in the dry country is that called by the Punjabis *khai* or *khari*; and by the Bagris *bur* (*Andropogon laniger*), also eaten by cattle; its red colour when ripe gives a tinge to the general landscape where it abounds. The *sain* or *sewan* is a tall coarse grass growing in high tufts, with many stalks on one thick root stem and several long narrow ears on each stalk. It is eaten by cattle even when dry. *Garhanm* is a very tall grass with long thin stalks growing from a knotty root stem, not often found growing by itself, but generally round a *kair* bush; cattle eat it when dry; but if they consume it when it is green, it is apt to cause tympanites. *Duchab*, a low grass which remains all the year round, and is eaten by cattle, has long spreading roots which cover the ground in all directions and are difficult to eradicate. Among grasses characteristic of the hard soil of the Ghaggar valley are the *khabbal* or *dub* (*Cynodon Dactylon*), a low jointed grass well known as an excellent fodder; the *dila* (*Cyperus tuberosus*), a coarse grass, eaten by cattle only when young, common in low-lying lands, the *sanwak* (*Panicum colonum*) eaten by cattle when green; and the *panni* (*Andropogon muricatus*).

The *jhar-ber* Bush.—The characteristic bush of the dry tract is the *shar-beri* (*Zizyphus nummularia*), its leaves known as *pala* are an excellent fodder for cattle. They are stripped off in November and stored or sold. In December 1880, when there was a scarcity of fodder, *pala* sold in the Sirsa bazar at 1½ maunds per rupee; and, as sometimes especially in the sandy tract south of Sirsa more than 2 maunds of *pala* per acre is gathered from the fields, the peasant can often, as he admits, pay his land revenue from the proceeds of his *pala* alone. The *jharberi* grows in cultivated fields and seems to have spread largely since the waste was brought under the plough. It is especially abundant in the light soil of the sandy tract. Almost the only indigenous tree of the dry tract is the *jand jandi* or *khejri* (*Prosopis spicigera*). Its pods (*Sangri*) are used as fodder for cattle.

When the rains fail the cultivator has nothing to do at home, so he takes his wife and children and drives off his cattle towards the river, where, at the time of the *rabi* harvest, he and his family find plenty of work and live in luxury, while his cattle are allowed to graze free of charge; many such families crossed the Satlej in 1881 into Montgomery.

The average amount of fodder produced by the cultivated land may be estimated to be as follows:—

Average produce in thousands of maunds.

	Juar.	Bajra.	Moth.	Rice.	Pala.	Wheat.	Barley.	TOTAL.
Bagar . .	12	184	4	...	50	...	6	256
Nali . .	70	233	10	40	20	59	60	492
Rohi . .	420	630	90	...	50	20	775	1,985
Utar . .	20	69	4	...	5	3	28	129
Hitar . .	33	4	...	...	...	66	12	115
TOTAL .	555	1,120	108	40	125	148	881	2,977

and Sirsa.	(H. T. Pease.)	OXEN.
<p><b>Cattle.</b>—In former times the wealth of the inhabitants consisted chiefly in their large herds of cattle <i>which they drove about</i> from place to place for grass and water; but as cultivation spread and the produce of the cultivated land increased in value, they became less dependent on the produce of their herds and accumulated other forms of capital. There seem to be some signs that the rapid change from the pastoral to the agricultural mode of life which this district has witnessed, and the breaking up of the prairie, may have caused a diminution in the numbers, and perhaps a deterioration in the quality of the cattle of the tract; but their food supply must be less precarious now than it was formerly when they were entirely dependent on the grass produced annually during the rainy season, which was rarely cut and stored, and they must have died in immense numbers during seasons of drought. Yet, even now, notwithstanding the care with which grass and straw are preserved, and the high prices which they sometimes command, a serious drought deprives the cattle of their usual supply of food, and the stock soon becoming exhausted vast numbers of them die of simple starvation, especially, when in an emaciated condition, they are exposed to the cold following rain. Mr. Oliver reported in 1863, 1864, and 1865 that the cattle were fast diminishing in numbers and deteriorating in quality, a great number had died of murrain and starvation, and the herds driven towards Kurnal in search of pasture had returned diminished by two-thirds of their number, and a great many cattle had been sold and taken down country. The breed had greatly deteriorated within Mr. Oliver's experience of 21 years; none of those fine bullocks for which the country was famed were to be met with. The deterioration he ascribed to three causes,—</p> <p>(1) Diminution of good pasture as all the best of the land is brought under the plough, (2) the frequency of murrain, and (3) breeding in, owing to the smaller herds and their more limited range. In 1866–67 the cattle were still suffering from want of pasture, and in 1867 and 1868 it was reported that more than half the cattle in the district had perished within the preceding two years from scarcity of fodder and the severe frost of March 1863, and the survivors were so tottering and emaciated that they could hardly be driven out to graze. Cattle in such a condition were ill-prepared to meet the drought of 1868–69, and it was estimated that in that year of 2,02,327 horned cattle 1,48,590 died and little more than one-fourth were left. The Bagris turned their cattle loose and the Mussalmans killed and ate theirs, but the Sikhs spared no trouble and expense to obtain fodder for their bullocks. So few were left that in the following March women were to be seen drawing the plough.</p> <p>In 1874–75 cattle disease was prevalent and was ascribed to the drought; of 13,000 cattle affected, 7,000 died. Again in 1877 rains failed, and 53,532 head of cattle, or nearly half the number in the district, were estimated to have died during the year. According to the enumeration made in 1879, there were then about 80,000 horned cattle in the district, or only two-thirds of the number estimated in 1875–76, and only two-fifths of the number said to have existed before the famine of 1868–69.</p> <p>In August and September 1880 we made an enumeration of the cattle of all sorts in the district. The opportunity was a good one, for the abundant and general fall of rain in the end of June and beginning of July had given a plentiful supply of grass and water everywhere, and for the time each village had enough for its own cattle, so that few herds had either entered or left the district, and at the time of the enumeration almost all the cattle were in their own village, as it is usual for all the cattle to be driven inside the village enclosure every evening; all the patwari had to do was to take the village headman with him in the</p>		<p>HISSAR DISTRICT. Sirsa Tahsil.</p>

OXEN.

Cattle of Harriana

HISSAR  
DISTRICT.  
Sirsa Tahsil.

morning, shut all the gates of the village but one, count all the cattle that went out to work or graze, and then go from house to house and count those remaining. I believe that the enumeration was fairly accurate and complete, and that its results approximately represent the actual number of cattle owned by residents of the district in the rainy season of 1880, being, however, probably somewhat under the truth. The following statement gives the number of live stock as then enumerated with the number returned in 1875-76 and 1882-83 :—

				Cattle.
1875-76	.	.	.	1,18,030
1880	.	.	.	1,77,152
1882-83	.	.	.	1,80,472

It is evident that the previous enumerations were incomplete, and that the effects of the drought of 1877-78 had been exaggerated. I am inclined to believe that the losses of previously bad years were also exaggerated, but there can be no doubt that in 1868-69 a very large proportion of the cattle in the district died. At all events the number of horned cattle now in the district is nearly up to the two lakhs estimated as existing previous to the drought of that year. After August 1880 the rainfall was very scanty, the grass dried up, and little fodder was produced, and in June 1881 the cattle were in a critical condition. The grass had all been completely burnt up, the fodder of the two previous harvests and the stacks of bajra straw preserved from former seasons had been almost entirely consumed, and fodder was hardly to be got at the ordinary price of grain. Had rain held off much longer, many thousands of cattle must have died of starvation, but the plentiful rains of 1881 came just in time and very few cattle were actually lost. Three of the four following harvests gave a plentiful supply of fodder and there was but little cattle disease, and in 1883 the cattle were perhaps more numerous and in better condition than they had been since 1868.

*Bullocks and Cows.*—According to the enumeration of 1880 the number of ordinary cattle in each assessment circle was as follows :—

	Bullocks,	Cows,	Bull calves,	Cow calves,
Bagar	1,964	4,439	1,355	2,835
Nali	8,119	7,360	3,553	3,442
Rohi	38,383	38,240	15,314	15,317
Utar	2,615	2,778	1,176	1,381
Hitar	3,741	3,153	1,097	1,290

and Sirsa.		(H. T. Pease.)		OXEN.	
<b>Cattle Fair.</b> —A great cattle fair is held at Sirsa during the months of August, September, and in March, and here a great number of cattle bred in the district are sold for export. The number of bullocks brought to the fair every year with the number sold and the average price have been as follows :—					HISSAR DISTRICT. Sirsa Tahsil.
Years.	Number of Bullocks		Total price,	Average price,	
	Brought to the Fair.	Sold.			
			₹	₹	
1863 . .	...	11,971	2,07,647	17	
1864 . .	...	26,133	4,83,439	18	
1865 . .	...	10,066	2,13,174	21	
1866 . .	24,953	21,953	5,22,403	24	
1867 . .	13,000	10,769	3,06,419	28	
1868 . .	15,275	11,775	2,80,758	24	
1869 . .	7,600	5,576	1,58,054	28	
1870 . .	17,000	13,854	3,90,362	28	
1871 . .	7,430	5,426	...	...	
1872 . .	6,400	4,885	...	...	
1873 . .	12,436	11,051	...	...	
1874 . .	23,408	10,787	2,09,807	19	
1875 . .	14,222	5,869	1,61,703	28	
1876 . .	22,970	8,093	1,95,482	24	
1877 . .	27,625	14,031	2,89,474	21	
1878 . .	22,095	11,398	2,98,371	26	
1879 . .	28,028	22,839	6,29,522	28	
1880 . .	23,031	18,541	4,97,027	27	
1881 . .	17,491	8,901	2,64,593	30	
1882 . .	31,246	19,210	4,41,717	23	
Average .	19,071	12,659	3,26,468	25	



OXEN.	Cattle of Harriana					
	Statement showing number of Bullocks brought, sold, total and average prices, at the Sirsa Cattle Fair from 1884 to 1894.					
	Years.	No. of bullocks brought and sold.		Total prices.	Average price.	REMARKS.
		No. brought.	No. sold			
Figures for 1883 . . .		Not available			R. a. p.	
August and September 1884 .		28,339	21,217	5,50,343	25 15 0	
" " 1885 .		30,843	20,527	5,43,717	26 7 10	
March and April 1886 . .		1,930	161	5,019	31 3 9	
September 1886 . . .		43,343	17,458	4,19,313	24 9 6	
March and April 1887 . .		2,000	1,302	16,000	11 6 7	Young stock.
August and September 1887 .		28,482	9,415	2,62,977	28 8 0	
March and April 1888 .		3,931	3,931	47,753	12 2 4	Young stock.
August and September 1888 .		38,069	19,971	5,01,297	29 9 8	
March and April 1889 . .		5,089	2,454	49,001	16 4 10	Young stock.
August and September 1889 .		12,697	6,776	2,09,372	30 0 2	
March and April 1890 . .		12,175	3,884	68,373	17 9 8	Young stock.
August and September 1890 .		29,719	18,284	3,95,249	21 9 10	
March and April 1891 . .		6,511	6,347	83,539	13 2 7	Young stock.
August and September 1891 .		18,512	13,537	3,88,628	28 11 4	
March and April 1892 . .		7,500	5,247	63,608	12 1 9	Young stock.
August and September 1892 .		11,360	7,235	3,44,244	31 0 7	
March and April 1893 . .		700	599	24,205	40 0 0	
August and September 1893 .		22,360	14,482	4,14,692	28 10 1	
March and April 1894 . .		7,000	6,619	34,017	20 4 0	Young stock.
August and September 1894 .		22,368	13,923	3,84,991	28 0 0	

The number of bullocks and cows is about the same, except in the Bagar chak, where the Bagri peasants do much of their ploughing by camels and sell their bull-calves, keeping the cow-calves to supply them with milk. In the Nali and Hitar the fewer number of cows than of bullocks is probably due to the great number of milch buffaloes kept in these tracts. Far more bullocks than cows are sold out of the district, but on the other hand cows are not so carefully tended as the more valuable bullocks and their death-rate must be higher, so that the number of cows and bullocks in the district probably remain about equal.

and Sirsa.	(H T. Pease.)	OXEN.
<p>The numbers of animals which attended up to 1892 were counted as they were brought into the enclosure where the fair was held, and it is possible that some are omitted or counted twice over, but the number of animals sold is trustworthy, for each purchaser has the sale recorded by the clerks employed for the purpose, states the price paid, and gets a certificate of the sale, for which he pays a fee of <math>\frac{1}{4}</math> anna per rupee on the price paid. The fair is now held under direct management, and the income from fees was ₹4,213 in 1881 and ₹7,114 in 1882. In 1886 the fair was divided into spring and autumn fairs. The spring fair is far smaller than the autumn one as a rule and young stock chiefly brought for sale. The autumn fair is better attended and adult stock forms the greater part of that offered for sale. Purchasers attend in great numbers, and there is a great demand for cattle of all kinds.</p>		<p>HISSAR DISTRICT. Sirsa Tahsil.</p>

OXEN.		Cattle of Hariana			
HISSAR DISTRICT. Sirsa Tahsil.					
A SIRSA CATTLE FAIR, 1895. <i>Statement showing the districts to which the cattle, including buffaloes purchased at the Fair, were taken.</i>					
Serial No.	Name of Districts.	Number of cattle purchased.	Class.	By dealers or breeders.	REMARKS.
<i>Spring Cattle Fair, 1895.</i>					
1	Bannu	325	...	...	Adult cattle.
2	Amballa	351	...	...	Do.
3	Mainpuri	573	...	...	Young stock (calves) and small bullocks.
4	Hind State.	30	...	...	Adult cattle.
5	Aligarh	737	...	...	Young stock.
6	Jaipur State	20	...	...	Adult cattle.
7	Hissar	1,676	...	...	Both.
8	Shahpur	689	...	...	Adult stock.
9	Dera Ismail Khan	637	...	...	Do.
10	Etawah	878	...	...	Young stock.
11	Agra	254	...	...	Do.
12	Patiala State	238	...	...	Both.
13	Farrukhabad	131	...	...	Young stock.
14	Muzaffarnagar	21	...	...	Both.
15	Saharanpur	10	...	...	Do.
16	Rohtak	81	...	...	Adult.
17	Rulandshahr	60	...	...	Both.
18	Gujranwalla	139	...	...	Adult.
19	Ferozepur	120	...	...	Do.
20	Jalandhar	5	...	...	Do.
21	Sialkot	0	...	...	Do.
TOTAL		7,035	...	...	

Statement showing the districts to which the cattle, including buffaloes purchased at the Fair, were taken.

and Sirsa.

(H. T. Pease.)

OXEN.

HISSAR  
DISTRICT.  
Sirsa Tahsil.

Statement showing the districts to which the cattle, including buffaloes purchased at the Fair, were taken.

Serial No.	Name of Districts.	NUMBER OF CATTLE PURCHASED.		Class.	By dealers or incubators.	REMARKS.
		Adult.	Young.			
<i>Autumn Cattle Fair, 1895.</i>						
1	Muradabad .	.	.			
2	Bulandshahr .	.	.			
3	Aligarh .	.	.			
4	Kurnal .	.	.			
5	Meerut .	.	.			
6	Jullandhar .	.	.			
7	Ferozepur .	.	.			
8	Rohitak .	.	.			
9	Hissar .	.	.			
10	Ludhiana .	.	.			
11	Amballa .	.	.			
12	Muzaffargarh .	.	.			
13	Faridkot .	.	.			
		8,820	4	8,824	All. Both.	

and Sirsa.

(H. T. Pease.)

OXEN.

HISSAR  
DISTRICT.  
Sirsa Tahsil.

OXEN.	Cattle of Harriana					
HISSAR DISTRICT. Sirsa Tahsil.	The cattle at the spring fair are almost all young animals bred in the neighbourhood, many of them untrained, and they are bought principally by dealers who take them away to the Upper Punjab and across the Jomna sometimes as far as Cawnpur. Those sold at the autumn fair are generally full grown. The same people attend this fair to buy as attend the Hissar and Jahazgarh fairs and the business done is in the same class of animals, with the exception that Mewati cattle are not brought in. The animals sold during the seven years ending 1882 come from the following districts and States:—					
	Year.	Sirsa.	Rohtak and Hissar.	Bikanir.	Patiala.	Others.
1876 . .	3,615	4,028	1,080	...	1	
1877 . .	5,324	5,909	3,099	417	9	
1878 . .	6,096	2,954	1,666	658	253	
1879 . .	11,174	8,253	2,212	1,255	294	
1880 . .	8,372	7,842	1,194	1,543	198	
1881 . .	4,395	2,371	1,215	1,135	74	
1882 . .	6,851	5,852	3,414	2,455	1,731	
Per cent. . .	43	34	14	7	2	
1893 Spring . .		5,133*	2,239	1,117	288	

\* Includes Sirsa.

The number of cattle brought to the fair and sold and the average price depend chiefly on the nature of the season. The prospect of a drought and a scarcity of fodder in the neighbourhood brings a great number of cattle to the fair, as their owners having difficulty in providing for them are anxious to sell; thus in the years 1887 and 1880 the number of cattle brought was great; on the other hand, when the supply of fodder is abundant and the prospects of rabi cultivation good, owners are not anxious to sell and few cattle are brought to the fair, as in 1875 and 1881. Again, a drought in the East reduces the demand from that quarter and few cattle are sold as in 1879 and 1880, when few buyers came from the North-Western Provinces. The prices of course depend on the relation of supply and demand and vary accordingly, being ordinarily lowest in years of drought, such as 1877 when many are anxious to sell and few to buy, and highest in years of plenty, such as 1881, when their owners can easily keep them at home and when many have means to buy and fodder to support more cattle. The effect of the bad years culminating in 1868-69 in diminishing the number of cattle in the district may be seen in the rapid rise in price and the fewer number of cattle sold for years afterwards; but now, although the price has not fallen so low, the numbers have recovered. On an average of about 20,000 bullocks brought to the fair, nearly 13,000 have been sold for  $\frac{1}{2}$  lakh of rupees at an average price of Rs25 per bullock. During the last seven years nearly half the animals sold at the fair have come from the Sirsa tahsil, and almost all of these are sold out of the district; so that on an average the Sirsa cattle breeders sell at Sirsa fair alone a surplus stock of 6,000 young bullocks for about 1½ lakhs of rupees in hard cash, or more than half the total new assessment of the district, and in some years their realizations at this fair amount to 2 lakhs of rupees. The foregoing statement (marked A.) will show the districts to which cattle are taken from this fair. The figures given relate only to the spring fair as the authorities have not

and Sirsa.	(H. T. Pease.)	OXEN.
<p>thought necessary to collect those for the autumn one. The classes of cattle attending are the same as those at Hissar. Sirsa bullocks are smaller; in fact small stock predominates. There is no cattle fair of any importance in the tahsil, but many cattle are taken to other fairs in the neighbourhood, such as those at Hissar, at Guga in Bikanir, and at Jellalabad in Firozepur, and many cattle are sold to dealers in the villages, so that it may safely be estimated that on an average of years the Sirsa peasants sell out of the district a surplus of 10,000 bullocks for more than 2 lakhs of rupees.</p> <p>Few bull-calves are allowed to grow up as bulls. The lucky animal selected to succeed his sire as lord of the village herd has an easy time of it. The peasants are careless about the quality of the bull, though they do try to select a promising animal and appreciate the value of the bulls which have been obtained in recent years from the Government cattle farm at Hissar and distributed amongst the villages with a view to improving the breed. A bullock is expected to do full work from the age of four to nine, and sometimes survives work and droughts to the age of 15. His work is constant but seldom very severe, and he is carefully tended by his master, especially if a valuable animal and his master is a Sikh. A young bullock grazing in the prairie is sometimes given eight seers of chopped straw in the house daily, and a bullock in full work may get 2½ seers of grain and 15 seers of fodder every day. In the dry tract the bullocks are brought home to the village in the evening and tied in the owner's courtyard or sometimes in a covered shed, and are then fed in the evening and again in the morning before they go out to work. They are given a rest and a feed in the middle of the day, and if there is grass within reach are allowed to graze for an hour. When not at work, they are often, if not very valuable, driven out to graze with the cows of the village. In the Hitar the bullocks are often kept in temporary shelters at the well both night and day and fed there in troughs with chopped straw and green fodder. The bullocks used on wells by the Mussalmans of the Hitar are small and feeble as compared with those in the dry uplands where the Sikhs especially have excellent bullocks. The Arains in the Ghaggar also usually have very fine animals. The average price of a young bullock at the Sirsa fair has varied from ₹17 to ₹30. An ordinary bullock in the Hitar costs ₹20 to ₹30, but an ordinary animal, such as is used by the Sikhs, costs ₹40 to ₹60, and a good bullock ₹60 or more. In 1876 a hundred standard artillery bullocks were bought at the Sirsa fair at an average of ₹50. The price has now risen very considerably, and animals of the class required cannot as a rule be got for ₹80 to ₹100.</p> <p><b>Cows.</b>—Few cows are sold out of the district; they are kept for breeding purposes and for milk. At the Sirsa fair only about 100 animals are sold annually and their average price there is from ₹8 to ₹9; but these are only the poorest specimens of worn-out animal. The price of a fair cow in the Hitar may be taken at from ₹15 to ₹25 and in the Rohi at ₹25 to ₹35, but sometimes as much as ₹45 to ₹50 is paid for a good cow giving 8 seers of milk. Cows generally calve between January and June. They drop the first calf at 4 years old and often produce six or seven. The average longevity appears to be about twelve years. Cows are milked twice a day, morning and evening; for the first fortnight the calf is allowed to take all the milk; for three months it gets half the milk and then a quarter of it. A Sirsa cow will not allow herself to be milked unless the calf is present and the milker ties the calf to her leg before commencing. An ordinary cow gives about 4 seers of milk a day from which 2 or 3 chittacks of <i>ghi</i> can be extracted. Milk sells in Sirsa at about 16 seers per rupee; but in the villages it is much cheaper. The cows of the</p>		<p>HISSAR DISTRICT. Sirsa Tahsil.</p>

O. 551—94

## OXEN.

## Cattle of Harriana

HISSAR  
DISTRICT.  
Sirsa Tahsil.

village are ordinarily driven out every day to graze in the common; and if a cow is in milk, she sometimes gets 2 seers of grain and 10 seers of fodder daily; but generally she has to be content with some chopped straw.

**Buffaloes.**—The number of buffaloes in the tahsil in 1880 was as follows:—

	Males.	Females.
Bagar . . . . .	361	1,076
Nali . . . . .	2,120	3,621
Rohi . . . . .	1,819	8,187
Utar . . . . .	101	517
Hitar . . . . .	237	1,861

Buffaloes cannot stand heat well and are seldom made to work in this district, but sometimes a buffalo may be seen in a cart or plough, or working at a well, yoked along with a bullock. Male buffaloes are usually sold to dealers from the districts farther north where they are used in cultivation, while buffalo cows are kept for milk and breeding purposes. Thus, three-fourths of the buffaloes in the district are cows, and almost all the buffaloes sold at the Sirsa fair, where sometimes nearly a thousand change hands, are males. The average price of a buffalo male at Sirsa fair is about ₹12, but sometimes ₹15 to ₹20 can be got. Buffalo cows are highly valued for their milk. A buffalo calves when 3 years of age in the eleventh month, usually about July; she ordinarily gives six or seven calves at intervals of two years. The calf is allowed to take all the milk for the first month, then half for three months, and a quarter for three months more. A buffalo gives milk for about a year, usually for from nine to ten months if she calves annually, and fourteen or fifteen months if she calves once in two years. She is milked only once a day in the evening and ordinarily gives about 6 seers per diem, from which about half a seer of *ghi* can sometimes be extracted. The buffaloes of the Ghaggar and Satlej riversides are much superior to those of the dry uplands. On the Satlej a good buffalo cow, giving 10 seers of milk a day, fetches as much as ₹100, and the ordinary price may be taken at about ₹60 or ₹70 in the Hitar and ₹40 to ₹50 in the Rohi. A buffalo is generally considered to consume twice as much as an ordinary cow, and the grazing and watering fees for buffaloes are usually twice those for cows; a good buffalo cow is well looked after when giving milk and sometimes gets  $3\frac{1}{2}$  seers of grain and 15 seers of fodder daily; but an ordinary buffalo is driven out with the village herd to graze in the common and gets a little chopped straw at home and perhaps a feed of grain.

**Produce and Price of *Ghi*.**—The Sirsa tahsil has for many years produced a large quantity of *ghi* over and above its own requirements for export northward to Ferozepur and eastward towards Delhi. With the improvement of communications and the increase of population, the price of *ghi* has gradually risen, and, as it is valuable in comparison with its bulk, its price has not been subject to such violent fluctuation as that of the heavier food-grains, although it has varied considerably with the number of cattle and the supply of fodder. Like the other produce of the district, *ghi* made its first decided start upward in price after the drought of 1860. From 1850 to 1850 its price remained pretty steady between ₹10 and ₹15 per maund; in 1860, when a great number of cattle died in the scarcity, it rose to ₹18 and remained between ₹15 and ₹18 till 1864. In that year a great number of cattle died from disease and starvation, and it was probably in consequence of this that in 1865 the price rose to over ₹20 per maund. The next three years were bad for cattle and the price

and Sirsa. (H. T. Pease.)		OXEN.
went on steadily rising until after the drought of 1868 which killed a large proportion of the cattle the price of <i>ghi</i> was ₹30 to ₹34 per maund. It fell during the next two years to about ₹20 and remained thereabouts till the drought of 1877, which again carried off a great number of the cattle. It then steadily rose to ₹25 or 30 per maund or about double the price of thirty years ago. <i>Ghi</i> is not much used by the poorer peasants, except on festive occasions when the consumption is sometimes enormous. It is sold to the richer classes, or stored for sale or export. The imports of <i>ghi</i> into the municipalities during the last eight years have been as follows:—		HISSAR DISTRICT. Sirsa Tahsil.
Sirsa	2,300	maunds.
Fazilka	2,600	"
Ellenabad	300	"
Rania	125	"
Rori	100	"

A good deal of this comes from Bikanir, but on the other hand a good deal of *ghi* is exported from the district without passing through the towns, and it will be safe to estimate the average annual surplus produce in the district at 4,000 maunds, which at ₹20 per maund represents an income of ₹80,000 to the cattle owners of Sirsa from this source alone.

**Management, etc.**—Almost every village in this district has still a considerable area of pasture land, and it is usual to send out all the unemployed cattle of the village daily under the charge of a cowherd to graze in the village common, and, when there is no crop on the ground, into the cultivated fields also. The bullocks and the more valuable milch animals are sometimes but rarely kept by their owner apart from the rest of the herd; but usually all the cows and buffaloes and all the calves with the village bull are driven out into the common in the morning after milking time and brought back again in the evening. There is sometimes great difficulty in supplying them with water. So long as there is water in the village pond, they are allowed to drink and wade in it, but when the pond dries up, water has to be drawn for them from the well with great trouble; but, as is the case in many villages, the water of the well is too saltish to drink, the cattle have to be driven to some neighbouring village to drink from the well there, and a considerable sum has often to be paid for this privilege ("pilu"). In many villages a grazing fee "*bhunga*" is paid by the cattle of the village, and usually a higher fee is charged for cattle of other villages. There are still vast tracts of unenclosed prairie in Bikanir; there the same system still prevails that was prevalent in Sirsa before the spread of cultivation. In the rainy season, after the annual growth of grass has sprung up, large herds of cattle are driven south into the prairie from Sirsa, Patiala, and even as far north as Ludhiana, are kept grazing there until the grass dries up, when they are driven northward home again. Fees are paid to the Bikanir State and to the local authorities for permission to pasture and water the herds ("gol")—sometimes as much as ₹2 a head for grazing and ₹1 for watering, but more often 8 annas for grazing and 4 annas for watering. The growth on the Bikanir prairies is wholly dependent on the rainfall, and when, as in 1880, rain fails generally in that neighbourhood, no grass is produced and no cattle are driven southward. In such years of drought little or no grass grows on the village commons, and the cattle are left in dependence on the cultivated land. Mr. Oliver is of opinion that the prairie is being brought under cultivation too rapidly, and urged that in the interests of cattle steps should be taken to check the spread of cultivation in the more advanced parts of the district, and to reserve a



## OXEN.

## Cattle of Harriana

HISSAR  
DISTRICT.  
Sirsa Tahsil.

large area in each village as a grazing ground for the cattle; and similar proposals have again been made. But, however desirable such arrangements may be to keep up a supply, in ordinary times they would have little effect in protecting the cattle from starvation in times of drought. In such years the uncultivated land produces as almost nothing, and indeed up to a certain limit not yet nearly reached. In Sirsa, cultivation actually increases the produce of fodder, and especially of storeable fodder, and thus renders the district better able to support its cattle in years of drought.

The average produce of straw even in unirrigated fields may be estimated at 4 maunds per acre, which is much more than the storeable produce of grass on the same land when uncultivated; but even in a year of drought like 1880, when the grass wastes produced almost nothing, the cultivated lands were estimated to have grown 2 or 3 maunds of fodder per acre. *Pala* too, which is considered one of the best fodders, grows more plentifully on cultivated than on uncultivated land. Considerable efforts are made by the people to store up fodder for their cattle. Some crops, such as *jowar*, turnips, and *moth*, are grown chiefly for the fodder they give, and care is taken to gather and store not only these crops, but also the straw of barley, wheat, *jowar*, and *bajra*, stocks of which may be seen about the homesteads of every village.

*Pala* and some of the best grasses are also cut and stored. It seems that more care is now taken than formerly to store fodder in these ways and preserve it for seasons of drought, and that the experience of the last two or three scarcities has taught the people to use every available means of storing fodder against such seasons. But, as a rule, all that they can do is to store up a quantity sufficient to support their cattle during the hot months of the dry weather, when no green food is available and the cattle have to be supported wholly on the stored fodder. This gets exhausted towards the end of June. If the rains then fail and no grass springs up, the cattle are left without food and numbers of them die; yet, except perhaps for a short time after one of these recurring scarcities, the district has always more cattle than it requires for agriculture and can afford to export a large number of young bullocks. If the peasants of the district breed fewer, the supply of fodder would be large enough to support a larger proportion of them through a drought, and the loss of cattle in a season of scarcity would be smaller; but then their surplus stock and their profits from the sale of young stock in ordinary season would be less. Cattle-breeding in such a country is a very speculative business, and the peasants seem to find it more profitable in the long run to allow their cattle to multiply up to the limit of subsistence, that is, up to the number which can be supported by the year's fodder until the usual season for a new growth of grass and to take their chance of the rains failing. If the rains come as usual, the speculation is a success and the cattle are safe for another year; if they fail, the speculator loses his profits and some portion of his capital; but one or two good seasons make it up to him again. It is not improbable that improvements in the storing of fodder would be utilized by the peasants of Sirsa, not so much in guarding against the consequences of drought as in multiplying his stock still further and taking his chance of the rains as before; and this is perhaps in the circumstances the most profitable way of conducting his trade as a cattle-breeder. The annual produce of fodder is increasing instead of diminishing with the spread of cultivation, and if the number of cattle in the district is now fewer than it used to be (which I doubt), the mortality in a season of drought is much less, as they are less dependent on the precarious produce of the prairie and

and Sirsa.	(H. T. Pease.)	OXEN.
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have larger supplies of fodder to supplement it. It is probable that the drought of 1880 which caused hardly any deaths among the cattle would, years ago, have killed a considerable proportion of the total number. Nearly half the area of the district is still virgin prairie and there are boundless stretches of grass-land within easy reach in Bikanir. The breed owned by the Sikhs and Arains is an excellent one, and finer cattle can seldom be seen anywhere. The demand for Sirsa bullocks and the prices they fetch show no sign of falling off but the contrary, and this would seem to show that the breed is as good as it used to be.

*Prices:—*

Good	bullocks	fetch	R125,	ordinary	R50,	lowest	R20
"	cows	"	R 60	"	R40	"	R15
"	buffaloes	"	R120	"	R50	"	R35
Male	"	"	R 30	"	R15	"	R 5

**Production.**—The production of cattle is greatly in excess of requirements, as the country is for the most part *bagar*, where camels are used for all purposes of burden and draught cattle but seldom employed. Whatever cattle are bred, therefore, in this part are mostly in excess of requirements and the people make a very fair profit on them. They are sold at the cattle fairs which are held twice yearly at Sirsa, the best adult stock to "Baiparis" chiefly "Roras" from Shahpur, Dera Ismail Khan, Ferozepur, Ambala, Bunnau, who sell them in their own districts and also in those of Gurdaspur and Amritsar. They sell on the *Udhar* system, taking payment in two instalments called *do kist*, the first payable in January and the second in July.

The second class of purchasers are "Banjaras" chiefly Chauhan Rajputs from the districts of Aligarh, Mainpuri, Agra, Etawah, Etah, and Furruckabad. These take chiefly young stock or small Bikanir bullocks which they sell for work in sugar mills. The young stock are disposed of in their own districts as far as Cawnpur. They are purchased by cultivators in parts where grazing is available, who rear them by grazing them on the fields after the harvest has been got, and in *usar* lands and jungle which is plentiful in Aligarh and Etah. The majority of the small adult stock is taken by men who go to the sugar-growing districts. Young stock chiefly to Aligarh and Furruckabad.

HISSAR  
DISTRICT.  
Sirsa Tahsil.

OXEN.		Cattle of Hariana						
ROHTAK DISTRICT.		Appendix A.						
		Statement showing the number of cattle present in each village of the Rohtak District.						
Number.	NAMES OF VILLAGES.	Number of cows.	Number of bulls.	Number of bullocks.	Number of calves.	Number of buffalo cows.	Number of buffalo bulls.	Number of ordinary Desi bullocks.
								REMARKS.
1	Saraula . . .	437	2	130	124	24	2	...
2	Chapar . . .	299	2	248	235	70	1	...
3	Girdherpur . . .	108	1	80	36	12	1	1
4	Babpur . . .	121	...	79	93	15	1	...
5	Sobana . . .	337	1	345	358	59	1	...
6	Dhakia . . .	358	...	397	315	82	2	...
7	Chandoul . . .	126	1	139	157	30	...	...
8	Kherijath . . .	220	1	223	302	105	3	...
9	Mahmudpur majra . . .	31	3	35	30	12	...	...
10	Falzabad . . .	67	2	55	67	18	...	...
11	Ladpur . . .	190	1	295	147	32	2	1
12	Kokiana . . .	142	1	91	117	31	2	...
13	Raepur . . .	79	...	69	84	26	...	...
14	Dadarpur . . .	237	1	185	152	47	...	Jungle.
15	Chandpur . . .	63	1	38	41	14	1	...
16	Kalranda . . .	139	1	85	105	32	...	...
17	Saloda . . .	223	1	219	184	89	2	...
18	Kaheri . . .	112	1	122	112	48	13	Jungle.
19	Kolana . . .	121	1	76	82	27	4	Do.
20	Koka . . .	82	1	57	74	24	6	...
21	Asedpur Khara . . .	97	1	73	81	30	5	...
22	Ahri . . .	342	2	259	147	45	8	...
23	Iserhera . . .	...	...	...	...	...	...	...
24	Fatehpuri . . .	106	2	87	105	30	4	...
25	Chandpuri . . .	...	...	...	...	...	...	...
26	Suraiti . . .	319	2	270	280	75	1	Jungle.
27	Sameshpur majra . . .	219	...	184	242	44	...	...
28	Sarakhpur Wairan . . .	...	...	...	...	...	...	...
29	Khoodan . . .	399	...	390	414	101	1	Jungle.
30	Sikandarpur . . .	91	1	55	117	36	1	...
31	Khora . . .	81	1	76	72	16	...	...
32	Kasni . . .	393	2	272	469	51	2	...
33	Machrauli . . .	519	3	399	573	99	4	...
34	Mangawas . . .	13	1	9	12	...	...	1
35	Khanchrauli . . .	205	...	115	146	23	1	2
36	Kaliwas . . .	175	2	132	265	24	1	...
37	Boria . . .	42	1	33	64	9	...	...
38	Khoongai . . .	137	1	156	177	95	13	...
39	Jaitpur . . .	...	...	...	...	...	...	...
40	Chaij . . .	211	2	161	145	45	4	...
41	Islamgarh . . .	422	2	257	354	81	1	...
42	Berdhana . . .	330	1	336	493	177	5	Jungle.
43	Sarauli . . .	305	3	279	356	107	5	...

		and Sirsa.		(H. T. Pease.)		OXEN.			
Statement showing the number of cattle present in each village of the		Rohtak District—continued.				ROHTAK DISTRICT.			
						Jhajihaar Tahsil.			
Number.	NAMES OF VILLAGES.	Number of cows.	Number of bulia.	Number of bullocks.	Number of calves.	Number of buffalo cows.	Number of buffalo bulia.	Number of ordinary Desi bulia.	REMARKS.
44	Bidhana . . . .	47	1	43	48	16	...	...	
45	Bajidpur . . . .	85	1	36	147	35	7	...	
46	Biharipur . . . .	190	2	120	169	37	4	...	
47	Palra . . . . .	228	1	156	218	19	...	...	
48	Tatavpur . . . .	...	...	...	...	...	...	...	
49	Talao . . . . .	417	...	349	493	61	3	...	
50	Jondi . . . . .	196	1	163	155	61	2	...	
51	Husaingunj (ur) Je-								
	hasgarh . . . .	347	2	258	358	52	5	...	
52	Chandani . . . .	325	...	212	280	102	5	...	
53	Dadla . . . . .	292	...	201	307	52	...	...	
54	Dhaur . . . . .	246	1	167	309	58	3	1	
55	Checkakwas . . .	20	2	9	19	6	...	...	Bir.
56	Sarkar Putta Rawaili	134	...	124	123	37	2	...	
57	Saikhupur . . . .	94	1	60	110	27	1	...	
58	Fortpura . . . .	38	1	31	37	10	...	...	
59	Tomspura . . . .	94	1	61	67	26	3	...	
60	Sonarwali . . . .	...	...	...	...	...	...	...	Bir.
61	Camelgarh . . . .	1	...	...	1	...	...	...	
62	Kherkhumar . . .	343	1	356	391	22	...	...	
63	Kaplana . . . . .	289	1	225	281	85	2	...	
64	Khatiwaa . . . .	230	...	186	184	32	1	1	
65	Garawar . . . . .	107	1	113	122	26	...	1	
66	Godda . . . . .	231	1	180	173	77	7	...	
67	Gowalisan . . . .	237	1	209	292	46	1	...	Jungle.
68	Gaderi . . . . .	127	...	77	114	12	1	...	
69	Malikshafpur . .	190	...	147	184	40	2	...	
70	Mohamedpur majra .	314	...	283	456	86	...	...	
71	Nagli . . . . .	...	...	...	...	...	...	...	
72	Babra . . . . .	94	...	89	74	30	1	...	
73	Gajrand . . . . .	99	...	82	76	33	2	...	
74	Salana . . . . .	434	...	361	406	134	8	...	Jungle.
75	Jehangirpur . . .	433	2	312	483	134	4	...	
76	Soora . . . . .	154	1	136	170	49	2	...	
77	Doorina . . . . .	6	...	4	7	1	...	...	
78	Kalai . . . . .	168	1	102	163	72	8	...	
79	Munimpur . . . .	169	2	126	168	26	2	...	
80	Bamnaula . . . .	261	...	175	206	59	4	...	
81	Pailpa . . . . .	231	2	152	213	66	1	...	
82	Badhana . . . . .	117	...	88	104	47	...	...	
83	Sondi . . . . .	137	...	90	108	28	1	2	
84	Badli . . . . .	887	6	965	959	259	12	...	
85	Daryapur . . . .	207	1	157	123	35	3	...	
86	Lagadpur . . . .	103	...	38	79	33	3	...	

## OXEN.

## Cattle of Harijans

ROHTAK  
DISTRICT.  
Jhajjhar  
Tahsil.Statement showing the number of cattle present in each village of the  
Rohtak District—continued.

Number.	NAMES OF VILLAGES.	Number of cows.	Number of bullocks.	Number of bullocks.	Number of calves.	Number of buffalo cows.	Number of buffalo bullocks.	Number of ordinary Desi bullocks.	REMARKS.
87	Ismaelpur . . .	150	1	109	129	40	2	1	
88	Dewakhana . . .	110	1	79	55	30	2	...	
89	Lohath . . .	66	1	39	31	5	...	...	
90	Badsa . . .	406	1	342	348	109	3	...	
91	Mundakhera . . .	145	1	189	193	62	...	...	
92	Fatehpur . . .	123	1	66	102	28	...	1	
93	Yakubpur . . .	269	3	329	322	132	9	3	
94	Khalikpur . . .	...	...	...	...	...	...	...	
95	Katancee . . .	172	...	155	136	90	10	...	Jungle.
96	Nangla . . .	63	1	73	48	16	1	1	Do.
97	Dadree . . .	191	1	139	254	74	2	1	Do.
98	Sanjipur . . .	...	...	...	...	...	...	...	
99	Aurangpur . . .	157	1	111	159	69	3	...	
100	Zahadpur . . .	123	1	245	219	215	28	1	Jungle.
101	Untloda . . .	69	...	33	56	19	1	...	
102	Sabli . . .	97	...	65	73	15	...	...	
103	Patasni . . .	110	...	62	97	28	1	...	
104	Bathaira . . .	252	...	157	272	125	6	...	Jungle.
105	Amadalpur . . .	186	...	117	143	65	2	...	Do.
106	Kheripatanda . . .	292	...	241	318	172	31	...	Do.
107	Lahoree . . .	474	5	152	371	345	65	...	Do.
108	Patanda . . .	647	3	529	655	151	7	...	
109	Birdadri . . .	...	...	...	...	...	...	...	Bir.
110	Okhalchana . . .	248	...	216	344	103	2	...	Jungle.
111	Salampara Zalim . . .	240	...	208	273	96	3	...	Do.
112	Salampara Kaisho . . .	276	...	211	309	95	11	...	Do.
113	Jakhala . . .	116	...	108	227	15	8	...	
114	Gooryani . . .	490	2	170	179	30	10	...	Jungle.
115	Boriwas . . .	42	...	22	67	12	1	...	
116	Ahmedpur . . .	114	...	71	78	10	1	...	
117	Soorokhpur Fatta-koshi . . .	94	1	80	77	19	...	...	
118	Shadipur . . .	70	1	25	38	22	4	...	
119	Modhaira . . .	170	...	86	70	55	16	...	Jungle.
120	Borampur . . .	88	...	57	66	13	...	...	
121	Ratamthal . . .	710	2	294	435	93	18	...	Jungle.
122	Usmanpur . . .	112	...	115	163	43	...	...	
123	Neola . . .	142	...	115	261	20	...	...	
124	Jailpur . . .	289	...	114	160	18	1	...	
125	Jhunda . . .	223	...	74	91	24	2	...	
126	Moharukpur . . .	102	1	78	109	18	...	...	
127	Toombahairi . . .	395	...	148	170	99	3	...	Jungle.
128	Khaparwas . . .	132	...	121	214	31	3	...	Do.
129	Kosli . . .	991	...	665	894	158	2	...	Jungle.
130	Borthelu . . .	71	...	53	118	16	1	...	
131	Zehadpurkoshi . . .	113	...	83	124	9	...	...	

		and Sirsa.		(H. T. Pease).		OXEN.			
Statement showing the number of cattle present in each village of the Rohtak District—continued.									
Number.	NAMES OF VILLAGES.	Number of cows.	Number of bulls.	Number of bullocks.	Number of calves.	Number of buffalo cows.	Number of buffalo bulls.	Number of ordinary Desi bulls.	REMARKS.
132	Tomna . . . . .	353	...	191	249	61	...	...	
133	Bola . . . . .	126	...	81	198	8	...	...	
134	Murchli . . . . .	175	...	131	199	36	1	...	
135	Nathaira . . . . .	121	...	116	112	23	1	...	
136	Bhakli . . . . .	122	...	154	262	31	1	...	
137	Chawah . . . . .	70	...	77	87	10	...	...	
138	Salawas . . . . .	588	...	327	464	96	3	...	
139	Bajidpur . . . . .	17	...	11	11	5	...	...	
140	Jhamri . . . . .	277	...	56	160	1	6	...	
141	Dhillawas . . . . .	166	...	109	163	15	3	...	
142	Sasrauli . . . . .	306	...	187	321	67	...	...	Jungle.
143	Mahawas . . . . .	97	...	40	88	20	...	...	
144	Selinga . . . . .	282	...	180	191	18	4	...	Jungle.
145	Barsliar . . . . .	648	...	437	566	53	7	...	Do.
146	Sundraethi . . . . .	272	...	131	180	24	3	...	
147	Rurlawas . . . . .	187	...	130	129	17	1	...	
148	Matanhail . . . . .	676	...	567	833	192	5	...	Jungle.
149	Mundsa . . . . .	197	...	146	143	55	1	...	
150	Raidhuwas . . . . .	102	1	87	122	21	5	...	
151	Dhainia . . . . .	112	...	72	35	14	...	...	
152	Rankhanda . . . . .	57	...	34	47	15	...	...	Jungle.
153	Bukhtiadpur . . . . .	200	...	142	214	46	...	...	
154	Babolia . . . . .	89	...	47	82	10	...	...	
155	Bhindawas . . . . .	193	...	150	161	40	...	...	
156	Bilochpura . . . . .	106	...	123	139	19	2	...	
157	Hussanpur . . . . .	152	...	98	132	49	1	...	
158	Chadwana . . . . .	138	...	115	124	32	...	...	
159	Koelpuri . . . . .	161	...	118	138	39	...	...	
160	Khatlawas . . . . .	161	...	152	216	53	...	...	
161	Khaparwas . . . . .	166	...	99	100	25	...	...	
162	Kunjia . . . . .	144	...	90	87	35	2	...	
163	Karanda . . . . .	114	...	74	92	16	...	...	
164	Kherihoshdar . . . . .	119	...	85	115	26	...	...	
165	Marante . . . . .	303	...	232	278	51	3	...	
166	Nawada . . . . .	44	...	45	63	12	2	...	
167	Khandrai . . . . .	109	...	60	105	27	...	...	
168	Nilahairi . . . . .	213	...	144	148	14	...	...	Jungle.
169	Mundahaira . . . . .	234	...	226	279	47	1	...	Do.
170	Boror . . . . .	200	...	136	158	40	1	...	
171	Kherimadanpur . . . . .	195	5	58	918	8	10	...	Jungle.
172	Madalpur . . . . .	67	...	51	45	17	...	...	
173	Nowgawan . . . . .	379	...	197	239	56	14	...	
174	Ladrani . . . . .	365	1	242	303	70	3	...	Jungle.
175	Humaunpur . . . . .	157	...	102	167	14	...	...	
176	Jhanswa . . . . .	309	1	176	230	40	2	...	

OXEN.		Cattle of Harriana						
ROHTAK DISTRICT. Jhajjar Tahsil.		Statement showing the number of cattle present in each village of the Rohtak District—continued.						
Number.	NAMES OF VILLAGES.	Number of cows.	Number of bulls.	Number of bullocks.	Number of calves.	Number of buffalo cows.	Number of buffalo bulls.	REMARKS.
177	Jhorli . . .	239	1	163	228	56	2	...
178	Mohanbori . . .	141	...	88	83	23	1	...
179	Dhana . . .	115	1	80	149	13	...	...
180	Dharwas . . .	102	...	92	89	22	...	...
181	Jemalpur . . .	133	1	80	133	17	...	...
182	Bhoorawas . . .	494	...	270	242	67	8	...
183	Buthalla . . .	253	...	143	169	27	2	...
184	Bhikanpur . . .	1	...	2	...	...	...	...
185	Amanli . . .	189	...	162	222	31	...	...
186	Dharauli . . .	154	1	102	177	33	2	...
187	Maliawas . . .	51	1	32	45	3	1	...
188	Gagoda . . .	263	1	111	47	30	7	...
189	Shahjehanpur . . .	59	...	36	73	14	2	...
190	Jhajjar . . .	1,281	2	911	1,246	290	7	...
Rohtak.								
1	Rohtak . . .	1,212	...	1,156	1,787	421	5	Jungle.
2	Tagamajra . . .	...	...	...	...	...	...	...
3	Sarae Ahmed . . .	16	...	6	18	2	...	...
4	Kotana . . .	...	...	...	...	...	...	...
5	Goddikheri . . .	237	...	213	369	115	...	...
6	Bakra . . .	72	...	88	88	25	1	2
7	Bagpur . . .	159	...	184	190	54	2	1
8	Balaur . . .	555	...	588	724	131	1	2
9	Basahan . . .	196	...	179	179	73	...	1
10	Ballab . . .	236	...	193	223	67	2	1
11	Bahar . . .	1,074	...	1,062	160	363	20	3
12	Bhootian . . .	...	...	...	...	...	...	...
13	Bhaniyapur . . .	95	...	119	183	50	...	...
14	Parah . . .	...	...	...	...	...	...	...
15	Bairi . . .	1,331	...	1,177	1,667	386	2	30
16	Paihrwar . . .	171	...	156	139	52	3	2
17	Jelalpur . . .	...	...	...	...	...	...	...
18	Chunnee . . .	292	...	293	452	112	1	1
19	Dobaldhan . . .	978	...	1,432	1,591	205	7	8
20	Dharana . . .	194	...	179	253	77	...	2
21	Ratanli . . .	427	...	356	391	113	3	1
22	Sonarik Khoord . . .	254	...	222	313	62	6	1
23	Sonari Kalan . . .	346	...	402	456	128	1	1
24	Sawana . . .	484	...	377	455	105	2	2
25	Sondana . . .	480	...	234	469	147	7	4
26	Simli . . .	50	...	65	87	21	...	1
27	Kaboolpur . . .	273	...	265	324	100	2	1
28	Marauntha . . .	330	...	466	444	242	4	2

		and Sirsa.		(H. T. Pease.)		OXEN.			
		Statement showing the number of cattle present in each village of the		Rohtak District—continued.		ROHTAK DISTRICT.			
		Rohtak District.				Rohtak Tahsil.			
Number.	NAMES OF VILLAGES.	Number of cows.	Number of bulls.	Number of bullocks.	Number of calves.	Number of buffalo cows.	Number of buffalo bulls.	Number of ordinary Desi bulls.	REMARKS.
29	Kakrana . . . .	171	...	184	140	44	...	2	Jungle.
30	Kaloi . . . .	710	...	936	1,283	533	6	2	
31	Kanaili . . . .	101	...	98	206	80	...	1	
32	Goornauthi . . . .	297	...	302	318	70	1	4	
33	Majra . . . .	841	...	772	945	254	6	3	
34	Maena . . . .	292	...	266	396	103	1	2	
35	Matana . . . .	...	...	...	...	...	...	...	
36	Maradijatun . . . .	175	...	194	210	82	1	1	
37	Masoodpur . . . .	59	...	60	69	20	...	1	
38	Wazirpur . . . .	119	...	127	167	67	2	2	
39	Doab . . . .	144	...	210	329	156	3	1	Jungle.
40	Anwal . . . .	384	...	489	494	197	5	2	
41	Baniyani . . . .	119	...	342	316	44	3	1	
42	Basana . . . .	170	...	158	177	74	1	2	
43	Bahalinandpur . . . .	192	...	249	311	91	1	2	
44	Patwapur . . . .	149	...	172	224	76	1	1	
45	Pailana . . . .	445	...	314	372	122	7	3	
46	Taunoorpur . . . .	69	...	42	50	21	...	1	
47	Sangbahaira . . . .	77	...	81	89	24	1	1	
48	Samopal . . . .	156	...	185	182	88	1	1	
49	Knaur . . . .	809	...	874	1,047	398	14	3	
50	Kaitora . . . .	256	...	260	334	154	1	2	
51	Kalanaur . . . .	1,313	...	1,475	1,551	551	12	4	
52	Karak Khoord . . . .	259	...	227	250	86	3	...	
53	Karak Kalan . . . .	995	...	890	963	249	10	10	
54	Khairi . . . .	137	...	112	202	66	3	1	
55	Kailoa . . . .	1,027	...	815	843	273	9	4	
56	Caddi Ballab . . . .	116	...	107	106	42	2	1	
57	Laheli . . . .	287	...	301	316	138	2	...	Jungle.
58	Manjah . . . .	...	...	...	...	...	...	...	
59	Moradpur Taikna . . . .	71	...	72	136	41	1	2	
60	Morandirangan . . . .	198	...	237	215	95	...	1	
61	Nagana . . . .	811	...	909	189	466	7	4	
62	Bahnakbarpur . . . .	842	...	439	800	285	8	5	
63	Mokha . . . .	907	...	1,011	1,354	381	4	5	
64	Bahmanwas . . . .	80	...	101	103	71	2	1	
65	Tatoli . . . .	685	...	697	703	428	23	2	
66	Jassiya . . . .	335	...	447	652	302	4	10	
67	Chamoree . . . .	138	...	265	289	247	19	1	Jungle.
68	Joindran . . . .	117	...	127	140	69	2	1	
69	Sanghi . . . .	647	...	970	1,182	680	19	15	
70	Sahanmajra . . . .	...	...	...	...	...	...	...	
71	Sasrauli . . . .	55	...	52	68	57	3	1	
72	Soondarpur . . . .	238	...	226	318	164	3	1	
73	Singhpura . . . .	870	...	956	1,213	558	13	15	



OXEN.		Cattle of Harriana							
ROHTAK DISTRICT. Rohtak Tahsil.		Statement showing the number of cattle present in each village of the Rohtak District—continued.							
Number.	NAMES OF VILLAGES.	Number of cows.	Number of bulls.	Number of bullocks.	Number of calves.	Number of buffalo cows.	Number of buffalo bulls.	Number of ordinary Desi buls.	REMARKS.
74	Kharwalee . . .	181	...	152	234	66	15	1	
75	Makrauli Khoord . . .	160	...	153	176	81	2	...	
76	Nasurpur . . .	...	...	...	...	...	...	...	
77	Basantpur . . .	80	...	91	132	58	3	1	
78	Dhamor . . .	339	...	357	414	214	3	1	
79	Ladhandh . . .	217	...	209	272	112	3	1	
80	Makrauli Kalan . . .	362	...	419	409	214	3	2	
81	Bhaganitpur . . .	249	...	184	227	20	2	1	Jungle.
82	Bainsi . . .	472	...	470	520	234	8	1	
83	Chandi . . .	432	...	355	559	218	3	1	Jungle.
84	Chiri . . .	733	...	685	1,018	509	8	1	
85	Katwara . . .	45	...	27	65	19	...	1	
86	Khookjatan . . .	241	...	259	346	17	1	2	
87	Kharanti . . .	308	...	298	330	159	1	2	
88	Ghooskhani . . .	137	...	89	109	52	2	1	
89	Karanthi . . .	178	...	113	205	77	3	2	
90	Googahairi . . .	44	...	67	77	36	...	...	
91	Lakhan Majra . . .	516	...	517	623	309	4	2	
92	Nandiyal . . .	176	...	143	248	87	1	2	
93	Bhairan . . .	359	...	432	381	212	9	2	
94	Bhairba . . .	914	...	832	1,061	281	5	4	
95	Baidriwa . . .	15	...	17	15	7	...	1	
96	Samar . . .	438	...	327	509	185	17	1	
97	Bahuje malpur . . .	104	...	87	129	36	...	1	
98	Samian . . .	734	...	573	761	382	6	2	
99	Ajayab . . .	375	...	369	509	207	8	1	
100	Foomana . . .	786	...	679	841	390	3	5	
101	Korkhora . . .	504	...	556	558	268	10	2	
102	Gorawar . . .	438	...	404	507	327	17	2	
103	Madina . . .	946	...	907	1,027	523	10	5	
104	Nadana . . .	892	...	919	1,046	526	8	6	
105	Nayania . . .	223	...	117	245	73	4	3	
106	Saisar . . .	381	...	320	344	166	12	2	
107	Bhairni Chandopal . . .	336	...	304	361	152	4	2	
108	Bhairni Soorjan . . .	383	...	292	268	155	7	3	
109	Bhairni Mahrajpur . . .	124	...	117	136	61	...	1	
110	Bhairni Bhairon . . .	243	...	197	252	83	3	2	
111	Samiooparhairi . . .	...	...	...	...	...	...	...	
112	Kheri Mahom . . .	139	...	123	138	58	1	1	
113	Maham . . .	964	...	1,053	1,155	345	4	3	Jungle.
114	Chorangla . . .	...	...	...	...	...	...	...	
Sampla.									
Sampla Tahsil.	1 Farmana . . .	410	4	532	849	262	8	...	
2	Radhan . . .	189	7	301	327	220	3	...	

and Sirsa.		(H. T. Peass.)						OXEN.	
Statement showing the number of cattle present in each village of the Rohtak District—continued.									
ROHTAK DISTRICT. Sampla Tahsil.									
Number.	NAMES OF VILLAGES.	Number of cows.	Number of bulls.	Number of bullocks.	Number of calves.	Number of buffalo cows.	Number of buffalo bulls.	Number of ordinary Desi bulls.	REMARKS.
3	Moazimnagar . . .	76	1	86	92	45	1	...	
4	Sailana . . .	374	5	457	606	66	1	...	
5	Bidhlan . . .	238	6	314	416	161	3	...	
6	Sairee . . .	152	3	216	289	143	5	...	
7	Khanda . . .	474	9	531	713	274	6	...	
8	Chanka . . .	78	3	82	194	49	1	...	
9	Sisana . . .	920	8	1,185	1,481	623	13	...	Jungle.
10	Ashrafpur Matinda . .	152	1	228	243	136	1	...	
11	Chanouli . . .	87	1	91	121	49	...	...	
12	Rohna . . .	321	4	542	650	316	2	...	
13	Khakhoda . . .	317	...	340	480	716	8	...	Jungle.
14	Khilyaundinpur . . .	...	...	...	...	...	...	...	
15	Piplee . . .	197	3	228	225	129	12	...	
16	Gopalpur . . .	202	4	297	333	166	9	...	
17	Brohna . . .	277	3	334	390	187	11	...	Jungle.
18	Jessore . . .	77	1	81	77	36	...	...	
19	Pai . . .	77	2	113	120	75	...	...	
20	Nilanthi . . .	258	3	373	369	178	4	...	
21	Kheri Jasore . . .	344	1	396	372	173	8	...	Jungle.
22	Jaur . . .	290	...	319	368	99	3	...	
23	Karhouli . . .	40	2	63	123	43	1	...	
24	Salabpur . . .	177	...	317	377	133	1	...	
25	Sahoti . . .	200	1	265	408	160	1	...	Jungle.
26	Paonala . . .	128	2	181	205	63	1	...	
27	Hassanpur . . .	11	...	9	20	8	...	...	
28	Bahadurgazh . . .	643	...	596	835	193	9	...	Jungle.
29	Balaur . . .	114	1	97	103	33	...	...	
30	Barkatabad . . .	142	2	219	204	59	1	...	
31	Ladakalan . . .	77	1	71	109	30	1	...	
32	Israhaira . . .	104	1	81	166	25	...	...	
33	Shaidipur . . .	90	1	65	68	13	...	...	
34	Zordakpur . . .	67	1	78	112	40	...	...	
35	Kangroh . . .	70	1	53	79	20	1	...	
36	Looksar . . .	161	2	161	230	71	...	...	
37	Gabhana . . .	393	3	334	427	133	1	...	Jungle.
38	Majri . . .	161	1	168	366	103	...	...	
39	Shahpur . . .	59	...	57	67	26	3	...	
40	Bapuiya . . .	558	2	631	670	215	2	...	
41	Kriakalan . . .	260	2	285	411	125	1	...	
42	Kherka Goojar . . .	245	1	239	260	66	...	...	
43	Doolaiya . . .	530	2	529	585	175	2	...	
44	Khodman . . .	246	2	250	331	93	2	...	
45	Matan . . .	517	2	469	755	164	6	...	

ROHTAK DISTRICT.  
Sampla Tahsil.

OXEN.		Cattle of Hariana						
ROHTAK DISTRICT. Sampla Tahsil.		Statement showing the number of cattle present in each village of the Rohtak District—continued.						
Number.	NAMES OF VILLAGES.	Number of cows.	Number of bulls.	Number of bullocks.	Number of calves.	Number of buffalo cows.	Number of buffalo bulls.	Number of ordinary Deel bulls.
46	Sulanthl . . .	99	1	76	104	25	2	...
47	Mehdipar . . .	82	1	94	79	19	3	...
48	Dabodakalan . . .	94	1	115	122	49	...	...
49	Daboda Khoord . . .	243	1	261	294	92	2	...
50	Dalailpur . . .	31	1	44	39	21	...	...
51	Loda Khoord . . .	152	2	209	218	85	1	...
52	Lya Majra . . .	163	...	383	364	121	2	...
53	Sarar Aurangabad . . .	85	2	125	88	39	1	...
54	Khaidka Musalman . . .	25	1	35	34	17	...	...
55	Saldah . . .	270	2	236	286	69	...	...
56	Tandahairi . . .	84	1	123	153	39	1	...
57	Kasar . . .	110	1	133	194	36	2	...
58	Sankhoul . . .	133	3	204	238	61	1	Jungle.
59	Bamnauli . . .	209	1	272	449	115	2	Do.
60	Makundpur . . .	40	1	35	34	12	...	...
61	Kananda . . .	361	2	404	506	132	5	Jungle.
62	Khairpur . . .	54	1	64	98	24	...	...
63	Ladron . . .	242	1	297	297	136	3	Jungle.
64	Kalasee . . .	272	1	346	404	178	2	...
65	Asoda . . .	404	2	722	677	314	4	...
66	Barabee . . .	131	2	397	387	184	2	...
67	Jhakoda . . .	159	1	210	308	57	1	...
68	Sodhpur . . .	...	...	...	...	...	...	...
69	Mandanthe . . .	813	3	1,075	1,032	358	3	...
70	Rohad . . .	524	1	555	756	157	1	...
71	Dehkora . . .	137	1	180	160	100	...	...
72	Lahorihairi . . .	198	1	154	235	63	...	...
73	Atel . . .	243	2	355	370	172	4	...
74	Morekheri . . .	174	1	278	269	113	3	...
75	Kherisadh . . .	213	1	211	316	39	3	...
76	Nayabas . . .	135	...	187	269	95	1	Jungle.
77	Giji . . .	127	1	60	234	86	2	...
78	Bhanishra Khoord . . .	187	1	189	263	60	...	...
79	Bhanisra Kalan . . .	140	1	148	144	61	...	...
80	Borhana . . .	531	3	656	843	188	2	...
81	Dhanlan . . .	267	2	229	252	88	2	...
82	Gochi . . .	315	2	329	464	129	2	...
83	Lakhriya . . .	68	1	89	96	42	...	...
84	Kharhor . . .	444	1	506	442	182	7	...
85	Chora . . .	1,333	5	1,360	1,620	421	9	...
86	Bhaproda . . .	521	1	591	724	156	2	...
87	Kooltana . . .	235	1	294	379	92	3	...
88	Gadhi Sampla . . .	192	1	232	232	73	1	...

and Sirsa.	(H. T. Pease.)	OXEN.
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Statement showing the number of cattle present in each village of the Rohtak District—continued.

ROHTAK  
DISTRICT.  
Sampla  
Tahsil.

Number.	NAMES OF VILLAGES.	Number of cows.	Number of bulls.	Number of bullocks.	Number of calves.	Number of buffalo cows.	Number of buffalo bulls.	Number of ordinary Deri bulls.	REMARKS.
89	Asenda . . .	151	1	112	170	39	1	...	Jungle.
90	Sampla . . .	353	1	321	353	35	5	...	
91	Koraivor . . .	448	2	528	600	160	4	...	
92	Madana Kalan . . .	111	2	134	167	62	3	...	
93	Madana Khoord . . .	123	1	144	141	40	...	...	Jungle.
94	Chuchi . . .	176	1	164	237	47	3	...	
95	Sariya . . .	145	1	147	184	58	...	...	
96	Datoor . . .	148	1	170	180	51	1	...	
97	Gandhra . . .	302	1	323	331	144	4	...	
98	Vakasma . . .	523	3	539	654	197	3	...	
99	Kasrainti . . .	120	1	182	201	78	2	...	
100	Kheri Sampla . . .	234	...	239	326	80	1	...	
101	Bhani Swa . . .	135	1	70	222	60	1	...	
102	Karour . . .	174	1	221	249	82	1	...	
103	Rewarikhera . . .	152	2	208	242	100	4	...	
104	Kheri Isra . . .	153	2	183	216	60	1	...	
105	Chonyana . . .	331	1	300	324	94	4	...	
106	Deewana . . .	53	1	48	41	13	...	...	
107	Ismarla . . .	833	2	644	1,079	318	5	...	
108	Sam Chana . . .	459	2	580	523	225	4	...	
109	Bohyana . . .	440	3	518	571	230	7	...	
110	Nonanda . . .	177	1	207	263	116	1	...	
111	Kangton . . .	64	1	88	118	37	...	...	
112	Digul . . .	783	10	1,388	1,345	303	7	...	
113	Raepur . . .	...	...	...	...	...	...	...	
114	Bhamiyan . . .	...	...	...	...	...	...	...	
115	Agarpur . . .	...	...	...	...	...	...	...	
116	Majrapur . . .	...	...	...	...	...	...	...	
117	Balont . . .	...	...	...	...	...	...	...	
118	Roorki . . .	434	3	467	482	192	1	...	
119	Voolangi . . .	460	1	131	702	212	4	...	
120	Gorar . . .	106	1	144	223	83	...	...	
121	Nizampur . . .	324	4	390	546	190	2	...	
122	Moongan . . .	144	1	217	322	115	1	...	
123	Bokbeta . . .	162	1	170	244	80	1	...	
124	Asan . . .	167	2	259	257	157	1	...	
125	Kansala . . .	230	1	308	347	100	4	...	
126	Humayunpur . . .	321	8	371	478	102	2	...	
127	Husangadh . . .	206	1	259	422	161	5	...	
		358	10	477	522	139	1	...	

OXEN.		Cattle of Hariana					
ROHTAK DISTRICT. Gohana Tahsil.		Statement showing the number of cattle present in each village of the Rohtak District—continued.					
No.	NAME OF VILLAGES.	Number of cows.	Number of bullocks.	Number of calves.	Number of buffalo calves.	Number of buffalo cows.	Number of buffalo bulls.
REMARKS.							
Gohana.							
1	Ahulana . . .	479	582	305	351	441	15
2	Thaska . . .	88	99	55	53	71	4
3	Ahmedpurmajra . . .	113	120	111	104	98	2
4	Gangesor . . .	68	100	79	66	89	...
5	Khandrai . . .	209	166	163	74	91	5
6	Bechpari . . .	447	560	335	313	417	5
7	Boroda . . .	692	1,120	617	658	668	35
8	Khanpur Khoord . . .	89	67	83	77	60	6
9	Bunwasa . . .	217	169	167	85	91	5
10	Bhondri . . .	49	73	67	50	33	...
11	Khelpeh . . .	42	61	40	8	10	...
12	Batana . . .	917	1,255	816	488	976	34
13	Bhawar . . .	362	330	366	403	379	34
14	Nizampur . . .	235	225	219	148	162	4
15	Bhamswan Khoord . . .	217	259	170	139	194	12
16	Mabra . . .	130	271	169	195	219	4
17	Mirzapur Kheri . . .	181	212	143	141	169	14
18	Chichrana . . .	297	395	269	366	395	14
19	Dhanana Allahoodpur . . .	467	397	327	192	286	3
20	Chapra . . .	81	72	62	23	39	1
21	Sikandarpur Majra . . .	271	88	114	89	131	1
22	Rebrah . . .	268	412	205	267	333	7
23	Randhana . . .	271	715	404	297	454	33
24	Rookhi . . .	292	238	208	123	277	4
25	Gahlour Kalan . . .	268	286	194	122	187	8
26	Gahlour Khoord . . .	89	61	52	23	40	1
27	Sewana Nial . . .	468	408	402	389	371	12
28	Rama Kheri . . .	92	106	75	74	85	3
29	Noorankhera . . .	228	189	159	93	150	7
30	Esonpur Kheri . . .	188	207	119	107	156	7
31	Kathoor . . .	781	694	675	432	468	14
32	Gangana . . .	404	643	329	461	226	2
33	Gohana . . .	551	673	450	240	548	18
34	Gurthwal . . .	304	579	467	265	601	10
35	Kohla . . .	204	152	225	129	107	2
36	Madua . . .	447	1,672	301	298	473	...
37	Mohamedpur . . .	373	456	382	366	357	2
38	Nagor . . .	154	206	178	88	133	...
39	Soror Namdar Khan . . .	73	76	84	42	49	...
40	Gurhuyal Khan . . .	65	75	78	49	45	...
41	Gadha . . .	51	72	54	54	67	...
42	Houli . . .	310	304	265	193	241	8
43	Bhaijan . . .	46	70	39	51	73	1
44	Bhaniswal Kalan . . .	30	714	395	434	452	8
45	Bhadauta Khas . . .	72	85	90	57	38	1

and Sirsa. (H. T. Pease.)							OXEN.	
Statement showing the number of cattle present in each village of the Rohtak District—continued.							ROHTAK DISTRICT. Gohana Tahsil	
Number.	NAMES OF VILLAGES.	Number of cows.	Number of bullocks.	Number of calves.	Number of buffalo calves.	Number of buffalo cows.	Number of buffalo bulls.	Remarks.
46	Bosana . . .	271	402	333	349	321	6	
47	Jalsi . . .	468	696	346	570	660	24	
48	Jarana . . .	204	298	145	117	16	2	
49	Gabwana . . .	215	261	195	101	106	4	
50	Johras . . .	332	317	157	199	251	22	Jungle.
51	Joli . . .	310	495	362	300	321	9	
52	Cherana . . .	255	481	217	255	355	13	Jungle.
53	Mathend. . .	214	203	156	112	195	3	
54	Chatera . . .	881	221	190	190	223	7	
55	Dhorana . . .	143	173	145	117	137	10	
56	Kharpur Kalan . . .	608	859	599	577	609	10	
57	Kelana . . .	50	46	29	13	21	...	
58	Sersaweh . . .	124	130	87	78	92	6	
59	Sewankeh . . .	100	113	72	97	73	9	
60	Koskana . . .	31	48	38	42	31	...	
61	Kahui . . .	431	527	311	183	284	5	
62	Surquthal . . .	259	431	258	183	284	5	
63	Kasaindi . . .	239	315	208	145	219	4	
64	Kasaindeh . . .	145	220	135	58	127	3	
65	Rabwara . . .	184	228	159	121	159	2	
66	Resal . . .	405	236	704	370	347	13	
67	Khare Dam Khan . . .	250	409	218	200	229	2	
68	Nart . . .	92	137	95	96	125	1	
69	Gaonri . . .	154	262	129	132	167	5	
70	Barantia . . .	151	199	154	64	88	2	
71	Hidhal . . .	159	273	127	161	202	3	
72	Lath . . .	377	485	292	261	401	13	
73	Moothi . . .	247	271	273	181	172	2	
74	Poothi . . .	210	209	247	141	158	4	
75	Balu . . .	103	127	109	72	86	3	
76	Shanera . . .	492	727	351	309	533	16	
77	Khatwal . . .	147	309	456	291	227	1	
78	Mandlana . . .	829	1,019	668	539	614	17	
79	Bhawri . . .	...	...	...	...	...	...	
80	Kharpur Khoord . . .	...	...	...	...	...	...	Jungle.
81	Mohamedpur . . .	...	...	...	...	...	...	
82	Besana . . .	...	...	...	...	...	...	
83	Modlona . . .	...	...	...	...	...	...	

## OXEN.

## Cattle of Harriana

HISSAR  
DISTRICT.  
Bhiwani  
Tahsil.

## Appendix B.

*List of villages in the Bhiwani Tahsil and number of cattle in each.*

No.	NAMES OF VILLAGES.	Number of cows with cow calves.	Number of bullocks with bull calves.	Number of buffalo cows.	Number of buffalo bulis.	Number of bulis.
1	Sai . . . . .	279	193	126	24	...
2	Sarsa . . . . .	87	60	30	14	...
3	Phoolpura . . . . .	111	93	34	4	...
4	Rewari . . . . .	272	194	80	30	...
5	Chang . . . . .	1,030	1,072	412	85	8
6	Mita Thal . . . . .	816	757	232	56	...
7	Ghosh Kani . . . . .	369	356	130	37	...
8	Tigri . . . . .	...	...	...	...	...
9	Khosra . . . . .	377	285	144	43	...
10	Tegrana . . . . .	1,150	904	370	106	...
11	Goejrani . . . . .	289	314	95	24	...
12	Paloowas . . . . .	328	314	99	18	...
13	Nathoowas . . . . .	199	230	89	24	...
14	Kaloowas . . . . .	146	128	35	18	...
15	Bamla . . . . .	970	894	338	40	...
16	Naurangabad . . . . .	88	83	27	2	...
17	Nanan . . . . .	38	26	6	1	...
18	Konte . . . . .	177	169	38	7	...
19	Dhana Ladanpura . . . . .	196	171	44	12	...
20	Dhana Narsan . . . . .	111	111	8	4	...
21	Jaunpal Bhiwani . . . . .	1,070	842	154	47	...
22	Lohar Bhiwani . . . . .	1,471	1,199	232	77	...
23	Raipura . . . . .	79	56	3	1	...
24	Baporeh . . . . .	1,240	977	226	63	8
25	Deo-ar . . . . .	1,015	812	115	33	...
26	Dinode . . . . .	763	933	121	60	...
27	Bairan . . . . .	408	299	87	16	...
28	Dang Kalan . . . . .	200	157	86	20	...
29	Dang Khoord . . . . .	189	162	45	16	...
30	Rewaseh . . . . .	710	504	86	21	...
31	Saghan . . . . .	487	325	87	12	...
32	Alakhpura . . . . .	173	141	44	12	...
33	T-shani . . . . .	501	554	115	23	2
34	Khanak . . . . .	461	369	138	27	...
35	Panjukhera . . . . .	223	112	15	7	...
36	Dadam . . . . .	171	62	17	3	...
37	Baganswala . . . . .	234	138	56	6	...
38	Jhamri . . . . .	145	99	11	4	...
39	Kherkheri Soban . . . . .	187	85	59	19	...
40	Kherkheri Makswan . . . . .	258	170	52	16	...
41	Dharan . . . . .	159	115	21	8	...
42	Doolri . . . . .	200	123	38	4	...
43	Nagana Kalan . . . . .	260	120	68	16	...
44	Nagana Khoord . . . . .	121	89	61	19	...
45	Goda . . . . .	...	...	...	...	...

and Sirsa. (H. T. Pease.)						OXEN.
List of villages in the Bhiwani Tahsil and number of cattle in each—continued.						HISSAR DISTRICT. Bhiwani Tahsil.
No.	NAMES OF VILLAGES.	Number of cows with cow calves.	Number of bullocks with bull calves.	Number of buffalo cows.	Number of buffalo bulls.	Number of bulia.
46	Rani Mahoo . . . . .	573	372	40	8	...
47	Bajineh . . . . .	302	413	29	8	...
48	Kohar . . . . .	446	300	40	10	...
49	Mahoawas Kohar . . . . .	108	69	19	3	...
50	Mahoawas Deosar . . . . .	48	25	2	...	...
51	Koosumbli . . . . .	164	100	5	2	...
52	Tetani . . . . .	167	85	8	1	...
53	Lohani . . . . .	1,002	471	81	43	...
54	Asalwas Wadeha . . . . .	167	89	...	...	...
55	Asalwas Narina . . . . .	318	176	14	11	...
56	Biskhra . . . . .	164	75	6	1	...
57	Nigla . . . . .	132	74	45	6	...
58	Dhani Brahmana . . . . .	188	124	6	3	...
59	Haitampura . . . . .	603	390	29	9	...
60	Laigarnenan . . . . .	368	143	37	14	...
61	Jaitwanabas . . . . .	147	91	16	4	...
62	Laigabhannan . . . . .	304	193	27	4	...
63	Nakteh . . . . .	322	147	47	7	...
64	Golagarh . . . . .	184	151	16	5	...
65	Dhaugar . . . . .	204	132	13	3	...
66	Jooi Khoord . . . . .	683	209	52	17	...
67	Jooi Kalan . . . . .	230	117	18	3	...
68	Pohkarwas . . . . .	186	104	20	2	...
69	Lalawas . . . . .	102	51	1	...	...
70	Koorai . . . . .	714	470	70	8	...
71	Indiwali . . . . .	519	236	43	9	...
72	Kairu Karrow . . . . .	2,802	1,558	156	61	...
73	Deoralah . . . . .	552	367	58	17	...
74	Hissan . . . . .	303	138	41	13	...
75	Salehwaleh . . . . .	231	134	19	6	...
76	Sendoahleh . . . . .	617	317	51	16	...
77	Soongarpur . . . . .	526	259	70	14	...
78	Alampur . . . . .	510	310	78	23	...
79	Patodhi . . . . .	301	156	34	9	...
80	Badalwaleh . . . . .	65	42	2	6	...
81	Thelore . . . . .	245	114	16	17	...
82	Sarel . . . . .	343	217	20	9	...
83	Baroleh . . . . .	265	151	49	9	...
84	Chepar Rangran . . . . .	185	120	12	1	...
85	Chepar Jogtayan . . . . .	166	62	11	5	...
86	Deryapur . . . . .	508	238	27	9	...
87	Garenpur . . . . .	369	208	54	26	...
88	Chenaneh . . . . .	83	53	9	5	...
89	Miran . . . . .	737	347	54	15	...
90	Bhereh . . . . .	344	149	49	17	...
91	Sedhan . . . . .	235	61	15	6	...
92	Jhelli . . . . .	250	89	16	4	...
93	Dhariwas . . . . .	270	109	40	12	...



## OXEN.

## Cattle of Harriana

HISSAR  
DISTRICT.  
Bhiwani  
Tahsil.

List of villages in the Bhiwani Tahsil and number of cattle in each—  
continued.

No.	NAMES OF VILLAGES.	Number of cows with cow calves.	Number of bullocks with bull calves.	Number of buffalo cows.	Number of buffalo bulls.	Number of bulis.
94	Khawa . . . . .	191	86	42	10	...
95	Bosan . . . . .	240	129	27	7	...
96	Rodha . . . . .	352	207	46	15	...
97	Katwa . . . . .	192	95	38	8	...
98	Medhan . . . . .	382	170	46	20	...
99	Dewaras . . . . .	246	121	36	17	...
100	Isberwal . . . . .	381	154	59	5	...
101	Tewani . . . . .	229	124	36	9	...
102	Mandholi . . . . .	525	250	20	2	...
103	Mithi . . . . .	280	194	43	15	...
104	Soorpura Khoord . . . . .	277	161	45	9	...
105	Soorpura Kalan . . . . .	370	192	23	10	...
106	Behel . . . . .	734	411	50	19	...
107	Sodiwas . . . . .	270	101	36	4	...
108	Patwar . . . . .	371	223	71	26	...
109	Geroh . . . . .	408	191	44	9	...
110	Morkeh . . . . .	201	125	27	12	...
111	Metani . . . . .	331	140	30	14	...
112	Sewaneh . . . . .	201	69	9	1	...
113	Reedwan . . . . .	421	210	51	14	...
114	Koolani . . . . .	260	103	22	2	...
115	Kaland . . . . .	567	122	61	11	...
116	Gonda . . . . .	293	120	30	11	...
117	Gheghant . . . . .	249	71	52	6	...
118	Bhakranwali Dhani . . . . .	22	67	37	9	...
119	Jhoompeh Khoord . . . . .	110	43	17	5	...
120	Jhoompeh Kalan . . . . .	605	315	51	39	...
121	Lulus . . . . .	314	60	48	8	...
122	Roodh Salili . . . . .	386	200	29	22	...
123	Moalah . . . . .	214	88	15	13	...
124	Khar Khari . . . . .	42	31	9	...	...
125	Gadhwa . . . . .	371	229	64	10	...
126	Khreh . . . . .	122	59	11	1	...
127	Dhool Koat . . . . .	151	107	26	5	...
128	Sewani . . . . .	950	483	133	43	...
129	Kakral . . . . .	138	78	40	7	...
130	Dhani Soobhanwali . . . . .	214	60	8	3	...
131	Garereh . . . . .	421	164	73	33	...
132	Naloi . . . . .	328	127	35	18	...
133	Barwa . . . . .	928	434	163	39	...

and Sirsa. (H. T. Pease.)							OXEN.
List of villages of the Hansi Tahsil and number of cattle in each.							HISSAR DISTRICT. Hansi Tahsil.
No.	NAMES OF VILLAGES.	Number of cows.	Number of bullocks.	Number of calves.	Number of buffalo cows.	Number of buffalo bulis.	Number of bulis.
1	Chan . . .	85	91	86	121	35	...
2	Barbhoori . . .	90	227	226	130	9	...
3	Sandiana . . .	140	158	164	90	...	...
4	Kapro . . .	590	559	867	331	...	...
5	Sotha . . .	72	87	112	62	6	...
6	Bhadakhera . . .	46	67	66	24	1	...
7	Pinari . . .	630	220	150	238	12	...
8	Sarsana . . .	195	139	199	150	4	...
9	Kharak . . .	295	407	551	276	...	...
10	Gianpura . . .	69	73	80	62	...	...
11	Biana Khara . . .	245	188	451	106	3	...
12	Dhadah . . .	125	118	127	70	3	...
13	Badhawar . . .	412	424	356	219	4	...
14	Gorade . . .	400	382	384	162	...	...
15	Datas . . .	832	548	527	166	4	...
16	Massudpur . . .	420	370	632	125	2	...
17	Sangna Ragho . . .	177	158	257	97	...	...
18	Seendharh . . .	72	85	112	49	...	...
19	Khanpur . . .	127	157	256	135	...	...
20	Rajhe . . .	423	309	359	249	7	...
21	Soola Khnee . . .	130	134	110	33	1	...
22	Gherae . . .	415	305	419	185	1	...
23	Kharkhari . . .	173	164	183	88	...	...
24	Khokha . . .	122	64	142	67	...	...
25	Raman . . .	80	72	76	50	...	...
26	Dandheri . . .	183	162	145	88	...	...
27	Omra . . .	503	496	854	249	2	...
28	Sultanpur . . .	447	371	215	346	...	...
29	Dhannya . . .	151	113	77	8	3	...
30	Roowari . . .	336	252	533	112	2	...
31	Mejhadput . . .	175	151	229	103	1	...
32	Bhalawas . . .	56	73	184	24	4	...
33	Nelweh . . .	340	149	295	81	2	...
34	Ratereh . . .	595	300	440	201	7	...
35	Ronath . . .	185	135	175	34	20	...
36	Shippor . . .	121	116	94	55	3	...
37	Bohal . . .	116	72	111	30	...	...
38	Kurawar . . .	351	316	294	110	8	...
39	Bhoortana . . .	133	147	119	26	2	...
40	Jemalpur . . .	536	561	724	279	4	...
41	Hajimpur . . .	184	156	200	36	9	...
42	Aurangnagar . . .	1	5	5	4	...	...
43	Paposeh . . .	212	175	174	105	2	...
44	Bewani . . .	741	646	697	380	2	...
45	Soomrakhera . . .	34	16	31	9	1	...
46	Bilyali . . .	987	949	1,102	396	59	...
47	Taga . . .	...	...	...	...	...	...
48	Soot . . .	241	202	268	130	2	...

## OXEN.

## Cattle of Harriana

HISSAR  
DISTRICT.  
Hansi  
Tahsil.

List of villages of the Hansi Tahsil and number of cattle in each—  
continued.

No.	NAMES OF VILLAGES.	Number of cows.	Number of bullocks.	Number of calves.	Number of cows.	Number of buffalo bulls.	Number of bulls.
49	Lohari Jathoo . . .	618	462	595	171	14	...
50	Madhana . . .	414	296	451	115	...	...
51	Dhenaneh . . .	966	670	1,202	196	3	...
52	Bedaisreh . . .	409	296	425	99	...	...
53	Jetai . . .	191	117	159	63	1	...
54	Taloo . . .	726	468	549	191	4	...
55	Poor . . .	394	351	498	120	4	...
56	Sawareh . . .	160	97	170	49	...	...
57	Sewaneh . . .	347	244	317	105	8	...
58	Mende . . .	599	320	640	150	8	...
59	Kherkhera . . .	80	150	143	59	1	...
60	Bhatoul Jatan . . .	276	249	349	110	1	...
61	Bhatoul Rangran . . .	90	60	83	35	3	...
62	Badaleh . . .	225	239	133	110	9	...
63	Kherbeleh . . .	351	263	214	172	15	...
64	Seoer . . .	163	228	350	122	2	...
65	Sorkhre . . .	253	213	160	129	1	...
66	Koongarh . . .	737	540	480	227	2	...
67	Madahel Kalan . . .	129	107	126	47	1	...
68	Bandaheri . . .	113	111	166	60	1	...
69	Madahel Khoord . . .	360	420	412	202	1	...
70	Madarheri . . .	315	224	401	137	1	...
71	Sangwa . . .	387	289	385	139	10	...
72	Saranpoothi . . .	672	527	675	255	2	...
73	Bas Khoord Bejan . . .	237	246	279	123	...	...
74	Bas Badshahpur . . .	281	314	102	205	1	...
75	Bas Akbarpur . . .	159	153	186	97	5	...
76	Bas Azamshahpur . . .	152	150	124	59	...	...
77	Bkaldaneh . . .	159	161	286	100	1	...
78	Khera Ramgran . . .	69	44	85	45	...	...
79	Maholeh . . .	128	119	268	77	...	...
80	Barchapur . . .	76	177	369	70	...	...
81	Geokani . . .	...	...	...	...	...	...
82	Kani Kheri . . .	276	170	218	102	1	...
83	Barsoleh . . .	290	282	417	218	9	...
84	Khoate Kalan . . .	730	614	654	332	87	...
85	Khote Khoord . . .	184	156	314	81	1	...
86	Gandas . . .	...	...	...	...	...	...
87	Nareh . . .	186	147	204	82	3	...
88	Keenr . . .	77	125	171	83	7	...
89	Rakhia Khas . . .	280	265	220	176	2	...
90	Kherilochab . . .	155	126	150	44	...	...
91	Kheri Jalab . . .	347	268	320	109	1	...
92	Haibartpur . . .	188	115	99	73	3	...
93	Gamra . . .	128	123	96	89	1	...
94	Rakhi Shahpur . . .	240	218	201	90	1	...
95	Lohari Ragho . . .	219	277	198	69	...	...
96	Therwa . . .	...	...	...	...	...	...

and Sirsa. (H. T. Pease.)							OXEN.
List of villages of the Hansi Tahsil and number of cattle in each— continued.							HISSAR DISTRICT. Hansi Tahsil.
No.	NAMES OF VILLAGES.	Number of cows.	Number of bullocks.	Number of calves.	Number of buffalo cows.	Number of buffalo bulls.	Number of bulls.
97	Saladheri. . .	...	...	...	...	...	...
98	Kajab . . .	...	...	...	...	...	...
99	Sisae Boola . . .	438	506	477	346	11	...
100	Sisae Kaliraman . . .	898	476	618	321	11	...
101	Kheribarkaish . . .	...	...	...	...	...	...
102	Majhad . . .	154	104	123	85	1	...
103	Chanout . . .	190	292	340	162	3	...
104	Bhatleh . . .	360	380	312	170	6	...
105	Kolaneh . . .	179	160	143	45	2	...
106	Kootubpur . . .	203	123	245	48	...	...
107	Deepal . . .	156	73	145	48	...	...
108	Bacr . . .	...	...	...	...	...	...
109	Hansee . . .	1,769	1,221	1,674	544	15	...
110	Pathi Mangal Khan . . .	250	165	216	79	30	...
111	Barsee . . .	1,207	869	946	395	9	...
112	Dhaneh . . .	741	532	1,027	298	13	...
113	Shaikhupura . . .	385	167	248	128	3	...
114	Kherigangan . . .	232	167	228	180	4	...
115	Jamaori . . .	339	262	269	179	3	...
116	Koombeh . . .	418	215	374	121	3	...
117	Thoraneh . . .	641	382	482	232	2	...
118	Palce . . .	366	218	315	177	5	...
119	Rajpureh . . .	85	112	243	79	3	...
120	Mada . . .	123	84	169	61	3	...
121	Moth Colonel Saheb . . .	239	186	307	82	...	...
122	Moth Rangran . . .	244	202	331	176	9	...
123	Majreh . . .	315	195	207	169	2	...
124	Narnoud . . .	806	488	688	443	13	...
125	Aurangshahpur . . .	161	98	152	79	1	...
126	Badana . . .	309	222	121	175	1	...
127	Kheri Roge . . .	70	54	79	40	...	...
128	Kherisoran . . .	74	59	71	32	...	...
129	Mallikpur . . .	124	87	122	90	11	...
130	Mirzipur . . .	429	455	687	364	3	...
131	Rajethal . . .	508	201	180	208	50	...
132	Kagsar . . .	198	70	138	41	2	...
133	Soolchaneh . . .	417	160	45	195	75	...
134	Bhainee . . .	376	270	429	204	1	...
135	Paitwar . . .	595	475	478	285	2	...
136	Khanda Kheri . . .	245	385	576	355	16	...
137	Jamni Kherah . . .	77	36	51	25	2	...
138	Ogalan . . .	524	420	380	198	1	...

## OXEN.

## Cattle of Harriana

HISSAR  
DISTRICT.  
Hissar  
Tahsil,

List of villages and number of cattle in each in the Tahsil of Hissar.

No.	NAMES OF VILLAGES.	Number of bufflocks.	Number of cows.	Number of buffalo bulls.	Number of buffalo cows.	Number of calves.	Number of buds.
1	Talwandi Badshapur	148	376	3	100	233	...
2	Talwandi Rooka	142	229	2	56	228	...
3	Seharweh	229	371	1	95	435	...
4	Doheteh	100	39	3	23	89	...
5	Booray	58	262	...	34	332	...
6	Bado Brahmana	81	104	...	41	181	...
7	Bado Rangran	58	121	2	49	151	...
8	Bherre	27	27	...	15	62	...
9	Haraita	123	158	...	69	203	...
10	Daha	175	174	...	54	250	...
11	Chandnoud	34	61	1	34	88	...
12	Pahal	72	101	1	37	72	...
13	Rawat Kheta	75	265	...	53	230	...
14	Chourode	88	167	2	41	143	...
15	Kahwas	57	238	4	42	172	...
16	Bhariyan	55	140	1	29	135	...
17	Pinharchak	58	142	1	42	165	...
18	Chaudhrwas	179	484	3	68	296	...
19	Gawar	34	231	6	35	345	...
20	Gorchhi	59	260	19	73	160	...
21	Sersana	104	405	3	39	166	...
22	Balasmond	349	806	1	151	417	...
23	Borak	191	303	32	78	270	...
24	Bandahairi	125	179	7	60	120	...
25	Dohhi	156	258	2	51	146	...
26	Bag'eh	82	199	1	51	166	...
27	Tailenwali	35	67	3	21	94	...
28	Kutea Kheri	30	65	...	6	23	...
29	Choudhriwali	40	183	...	64	165	...
30	Ghorsal	38	104	1	6	67	...
31	Moda Kheta	92	241	1	52	137	...
32	Deroli	47	188	1	46	173	...
33	Kharaberwala	130	120	2	23	93	...
34	Adampur	101	274	1	53	352	...
35	Kohli	123	234	4	26	160	1
36	Kali Rawan	255	594	5	134	377	...
37	Faransee	56	111	2	13	73	...
38	Keslu Kheta	...	...	...	...	...	...
39	Landhri Sookpamhran	274	339	35	136	216	...
40	Chikanwas	79	143	8	129	63	...
41	Doorjanpur	90	201	14	52	110	...
42	Jegan	48	55	25	39	85	...
43	Astanwan	87	270	5	75	140	...
44	Kajeh	243	230	4	45	189	...
45	Ancha Kherkheri	...	...	...	...	...	...
46	Nasli Khoord	58	138	3	17	65	...
47	Malaper	100	170	4	25	124	...
48	Mahel Sarae Moth Sarae.	58	160	6	40	190	...

and Sirsa. (H. T. Pease.)							OXEN.
List of villages and number of cattle in each in the Tahsil of Hissar— continued.							HISSAR DISTRICT, Hissar Tahsil.
No.	NAMES OF VILLAGES.	Number of bullocks.	Number of cows.	Number of buffalo bulls.	Number of buffalo cows.	Number of calves.	Number of bulls.
49	Ladwi . . .	83	115	4	30	118	...
50	Jakhole . . .	88	192	5	33	181	...
51	Kartan . . .	89	177	...	19	109	...
52	Seeshwaleh . . .	80	287	10	41	128	...
53	Bhewani Rohelan . . .	62	135	1	54	165	...
54	Soondawas . . .	59	152	1	39	142	...
55	Kharia . . .	128	210	2	38	134	...
56	Kabhair . . .	187	226	1	116	231	...
57	Mohebatpur . . .	205	190	1	35	218	...
58	Seeswal . . .	336	389	1	63	384	...
59	Selemgarh . . .	117	162	1	50	158	...
60	Merigni Kherch . . .	182	205	6	60	121	...
61	Matersham . . .	171	226	5	91	134	...
62	Naoli Kelan . . .	176	186	...	78	110	...
63	Shahpur . . .	145	185	1	56	182	...
64	Lodas . . .	70	93	4	9	78	...
65	Hissar . . .	697	992	10	168	1,034	...
66	Satroud Khoord . . .	127	147	...	91	180	...
67	Satroud Khas . . .	288	223	3	172	286	...
68	Satroud Kalan . . .	213	233	1	129	249	...
69	Raepur . . .	225	241	1	123	236	...
70	Neana . . .	351	354	3	227	385	...
71	Alipur . . .	215	412	1	157	368	...
72	Kherer . . .	155	330	1	156	193	...
73	Mayer . . .	110	105	...	66	249	...
74	Baighana . . .	294	320	2	151	342	...
75	Ladweh . . .	330	524	...	104	332	...
76	Daemeh . . .	159	148	10	59	142	...
77	Ladweh Goojar . . .	42	76	...	13	55	...
78	Ladweh Bhojraj . . .	43	51	...	49	70	...
79	Mangalipana Mohabet . . .	140	207	...	46	413	...
80	Mangalipani Sootia . . .	74	118	...	44	176	...
81	Mangalipana Jhara . . .	119	87	...	18	118	...
82	Mangalipana Aklan . . .	113	60	...	12	90	...
83	Mangalipana Brahmna . . .	16	15	...	3	15	1
84	Murka . . .	34	84	...	15	78	...
85	Dabreh . . .	177	169	...	35	215	...
86	Kaimrer . . .	410	418	1	97	310	...
87	Daiway . . .	92	87	1	29	104	...
88	Mooklan . . .	111	171	5	45	154	...
89	Patan . . .	167	162	5	40	152	...
90	Dhuranwas . . .	47	109	...	15	52	...
91	Rawalwas Kalan . . .	137	218	5	47	143	...
92	Rawalwas Khoord . . .	160	271	2	66	182	...
93	Nathwaneh . . .	10	27	...	13	15	...
94	Handwan . . .	89	109	1	19	70	...
95	Koerrer . . .	115	165	1	23	128	1
96	Toks . . .	87	109	3	25	83	...

OXEN.		Cattle of Haryana					
HISSAR DISTRICT. Hissar Tahsil.		List of villages and number of cattle in each in the Tahsil of Hissar— continued.					
No.	NAMES OF VILLAGES.	Number of bullocks.	Number of cows.	Number of buffalo bul's.	Number of buffalo cows.	Number of calves.	Number of bul's.
97	Ganguwah . . .	192	252	1	44	201	...
98	Beer Hissar . . .	...	...	...	...	...	...
99	Falwandi Rana . . .	154	277	4	37	162	...
100	Mirzapur . . .	359	345	4	128	592	...
101	Dhansoo . . .	395	380	1	90	570	...
102	Beganeh . . .	124	197	...	48	210	...
103	Dhing Taneh . . .	133	160	...	18	195	...
104	Badon Patti anal . . .	39	48	...	5	79	...
105	Badon Patti dome . . .	70	62	...	6	92	...
106	Behbalpur . . .	124	149	...	16	127	1
107	Khairree . . .	126	151	...	30	155	...
108	Jooglan . . .	318	308	10	80	388	1
109	Thaska . . .	67	167	2	13	131	...
110	Nagthaleh . . .	339	395	4	91	339	...
111	Sandoul . . .	100	104	2	25	147	...
112	Shamsookh . . .	168	251	1	82	350	...
113	Khareh . . .	32	64	...	18	47	...
114	Karori . . .	155	195	1	59	167	...
115	Balek . . .	327	397	1	187	520	...
116	Jeoreh . . .	200	230	1	49	307	...
117	Beechpari . . .	100	166	...	42	216	...
118	Sarsoud . . .	313	388	13	171	383	...
119	Panghar . . .	125	137	1	50	196	...
120	Burwaleh . . .	1,054	911	8	274	1,141	...
121	Khaidar . . .	497	477	...	194	464	...
122	Iserhairi . . .	...	...	...	...	...	...
123	Bhaine . . .	150	138	3	66	207	...
124	Nawagaon . . .	128	152	...	40	232	...
125	Dowlerpur . . .	177	283	2	82	423	...
126	Bhaira . . .	156	183	2	71	241	...
127	Oklaneh . . .	254	205	2	113	314	...
128	Bhoda Khara . . .	132	232	...	77	230	...
129	Prabhoowaleh . . .	140	235	...	64	187	...
130	Latni . . .	311	256	11	132	450	...
131	Hassangarh . . .	269	184	8	200	333	...
132	Kallasbhaine . . .	45	80	...	35	78	...
133	Bobuah . . .	180	166	...	130	153	...
134	Alipur . . .	324	265	...	106	243	...
135	Kherkhara . . .	280	301	3	140	215	...
136	Serereh . . .	89	98	3	54	228	...
137	Madlondeh . . .	444	305	2	360	784	...
138	Koombakerch . . .	103	73	8	96	81	...

and Sirsa. (H. T. Pease.)							OXEN.
List of villages and number of cattle in the Sirsa Tahsil of Hissar District.							HISSAR DISTRICT. Sirsa Tahsil.
No.	NAMES OF VILLAGES.	Number of bullocks.	Number of cows.	Number of buffalo bulls.	Number of buffalo cows.	Number of calves.	Number of Hissar buls.
1	Jogeewala . . .	42	172	2	45	89	...
2	Chahaewala . . .	137	312	5	82	216	...
3	Rampura Nowabad . . .	24	105	1	13	53	...
4	Kakdana . . .	67	178	5	17	128	...
5	Khariya (Khumaiwala) . . .	74	96	2	16	66	...
6	Khairra . . .	22	56	2	12	39	...
7	Rajpura . . .	14	86	4	15	26	...
8	Gusainwala . . .	24	94	2	17	68	...
9	Jassana . . .	18	39	1	0	45	...
10	Gaizurana . . .	61	152	1	65	111	...
11	Tarkanwali . . .	6	104	10	47	90	...
12	Shahpur Mandauri . . .	61	124	3	27	56	...
13	Sakar (Sakar Mandauri) . . .	66	152	3	27	78	...
14	Sawapur Mandauri . . .	60	123	1	19	67	...
15	Roapana Bishnoia . . .	65	68	1	19	51	...
16	Nairana . . .	107	191	3	13	105	...
17	Naraen Khera . . .	24	55	...	9	25	...
18	Rajpura Keranwali . . .	52	108	6	40	71	...
19	Nahranwali . . .	...	...	...	...	...	...
20	Makhu Shoran . . .	39	141	2	44	87	...
21	Sundarpur (Nathu Seri Kalan) . . .	16	200	2	60	110	...
22	Natha Seri Kalan . . .	16	200	2	69	110	...
23	Hazeera . . .	55	130	3	97	102	...
24	Rampur Dhellanwaleh . . .	11	85	13	12	67	...
25	Iriakhara . . .	27	66	3	10	58	...
26	Roopabas . . .	29	203	2	31	136	...
27	Landesar . . .	89	216	3	31	240	...
28	Darba Khoord . . .	29	85	5	18	91	...
29	Manak Deewan . . .	...	10	...	17	16	...
30	Darbeh Kalan . . .	49	242	1	69	261	1
31	Bandhaweh . . .	21	68	2	6	55	...
32	Narban . . .	19	84	2	10	50	...
33	Raenur . . .	5	25	...	1	22	...
34	Bairasree . . .	45	145	...	12	126	...
35	Kootiana . . .	15	40	1	19	34	...
36	Junal . . .	114	450	9	97	315	...
37	Dhookra . . .	68	141	8	3	37	...
38	Barwali dome . . .	4	5	...	2	2	...
39	Goockiakhara . . .	97	138	6	18	122	...
40	Bakreryanwali . . .	60	128	4	26	90	...
41	Chanboorja . . .	36	46	...	10	46	...
42	Tintana . . .	45	100	3	29	92	...
43	Arniwali . . .	40	108	3	18	87	...
44	Neza Khera . . .	14	109	...	14	119	...
45	Alimohamed . . .	57	83	2	25	83	...
46	Chodiwal . . .	12	90	...	10	80	...



OXEN.		Cattle of Harriana					
HISSAR DISTRICT. Sirsa Tahsil.		List of villages and number of cattle in the Sirsa Tahsil of Hissar District—continued.					
No.	NAMES OF VILLAGES.	Number of bullocks.	Number of cows.	Number of buffalo bulls.	Number of buffalo cows.	Number of calves.	Number of Hissar bulls.
47	Khundawali . . .	...	...	...	...	...	...
48	Phoolka . . .	27	208	5	23	154	...
49	Kanwarapura . . .	36	100	2	40	125	...
50	Koosumbhi . . .	20	161	...	34	114	...
51	Chaksoochan . . .	...	...	...	...	...	...
52	Tajia Khera . . .	24	81	12	48	62	...
53	Sah owala . . .	36	102	9	45	51	...
54	Sharepura . . .	65	199	9	33	245	...
55	Lakho Kigadli (urf)						
	Mathi Gadli . . .	27	62	2	14	43	...
56	Kocka thana . . .	24	74	15	14	34	...
57	Ding . . .	29	321	3	101	337	...
58	Mochiwali . . .	39	90	1	78	145	...
59	Patli Daber . . .	55	101	11	58	129	...
60	Bagguwali . . .	28	62	5	34	47	...
61	Narel Kalan . . .	74	79	5	41	72	...
62	Jodhka . . .	134	247	2	71	274	...
63	Soochan . . .	68	88	6	54	62	1
64	Kotimutsil Rania . . .	204	265	5	91	226	...
65	Bhaudhin . . .	176	234	10	60	213	...
66	Sristewala Bara (urf)						
	Sangale Khera . . .	69	93	1	16	97	...
67	Barowalee (1st) . . .	250	160	10	71	27	...
68	Bharooka . . .	40	101	13	39	106	...
69	Darbee . . .	293	239	5	85	219	...
70	Rasoolpur . . .	21	40	1	21	7	...
71	Shakar Khera (urf)						
	Shakarwala . . .	...	...	...	...	...	...
72	Morrewala (urf) Bhaun-						
	pur . . .	88	55	9	26	80	...
73	Sikanderpur . . .	218	179	9	67	163	...
74	Kasimkhera . . .	...	...	...	...	...	...
75	Handikhera . . .	40	52	...	25	39	...
76	Fattehpur Baidwala . . .	143	94	4	46	117	1
77	Bajika (urf) Jandian . . .	104	166	11	93	150	...
78	Kanganpur . . .	53	34	24	21	48	...
79	Khairpur . . .	59	31	25	19	30	...
80	Chaturgarh . . .	...	...	...	...	...	...
81	Ser-a . . .	503	1,261	24	239	1,293	...
82	Shamshabad . . .	...	...	...	...	...	...
83	Khawaja Khera . . .	74	32	3	24	64	...
84	Ramnagar (urf) Lange-						
	wala . . .	8	28	...	1	34	...
85	Netar . . .	102	60	21	42	88	1
86	Shahpur Begu . . .	334	231	10	100	201	2
87	Rangri Khera . . .	33	35	3	...	24	...
88	Schidanwag . . .	...	...	...	...	...	...
89	Mohamedpur Salarpur	71	64	6	56	90	...

and Sirsa. (H. T. Pease.)							OXEN.
List of villages and number of cattle in the Sirsa Tahsil of Hissar District—continued.							HISSAR DISTRICT. Sirsa Tahsil.
No.	NAMES OF VILLAGES.	Number of bullocks.	Number of cows.	Number of buffalo bulls.	Number of buffalo cows.	Number of calves.	Number of Hissar Bulls.
90	Bahmoor . . .	61	75	8	7	60	...
91	Tetukhera (urf) Alipur . . .	...	...	...	...	...	...
92	Mangala . . .	381	200	40	202	298	2
93	Modi Khera . . .	77	76	6	39	68	...
94	Laiwalwalli . . .	...	...	...	...	...	...
95	Madhoo Sanghanet . . .	195	258	14	102	235	...
96	Malika . . .	68	165	7	14	40	...
97	Maizodeen . . .	128	36	12	83	68	...
98	Chak Kasaiyan (urf) Chak Dome . . .	49	21	1	20	38	...
99	Ferozabad . . .	109	44	27	104	79	...
100	Gidranwali . . .	26	18	9	22	44	...
101	Kashopura . . .	50	38	60	38	53	...
102	Kottee . . .	75	17	4	33	45	...
103	Hameerpura . . .	40	56	2	6	27	...
104	Munna Khera, near Soorbadh . . .	64	64	...	1	36	...
105	Chitakni Dhab . . .	46	134	2	20	153	...
106	Bhuratwala . . .	36	202	13	48	111	1
107	Kuttabadh (urf) Soorbadh . . .	231	110	14	168	215	...
108	Mooslee (urf) Dabwali . . .	7	15	...	3	14	...
109	Porka . . .	140	190	13	35	158	...
110	Mithi Sooreret (urf) Sooresa Kalan . . .	54	97	9	103	57	...
111	Kharez Surera (urf) Soorera Khoond . . .	36	83	3	48	106	...
112	Mithanpur . . .	69	113	3	9	21	...
113	Kasam Sarieh . . .	46	90	1	21	47	...
114	Meerna (urf) Vumba-ser . . .	53	68	1	1	29	...
115	Dhaulpalea . . .	49	93	...	12	47	...
116	Beeroowaleh Khoord . . .	68	93	2	27	171	...
117	Elnobad (urf) Kharual . . .	153	420	12	77	413	...
118	Thoheriya . . .	31	85	2	1	38	...
119	Talwareh Khoord . . .	313	293	10	91	252	...
120	Ratta Khera . . .	16	24	3	27	29	...
121	Bainee . . .	247	117	1	75	198	...
122	Kairawali . . .	291	33	80	136	93	...
123	Harnet Khord . . .	2	11	41	70	28	...
124	Kanjarwala (urf) Rajakwala . . .	45	14	14	33	24	...
125	Mirzapur (urf) Harni Kalaie . . .	6	53	3	40	37	...
126	Jag Melehra . . .	325	112	50	191	190	1
127	Chechal Kotlee . . .	18	28	15	42	40	...
128	Nakaure . . .	178	56	94	94	116	...
129	Amritsar . . .	198	160	77	155	151	2

## OXEN.

## Cattle of Harriana

HISSAR  
DISTRICT.  
Sirsa  
Tahsil.

List of villages and number of cattle in the Sirsa Tahsil of Hissar  
District—continued.

No.	NAMES OF VILLAGES.	Number of bullocks.	Number of cows.	Num- ber of buffalo bulls.	Number of buffalo cows.	Number of calves.	Num- ber of Hissar bulls.
130	Boodhi Maree . . .	48	24	7	70	38	...
131	Mamera . . .	148	122	6	80	111	...
132	Majoo Khera . . .	64	35	12	70	15	...
133	Pattiker Palka . . .	41	31	19	38	23	...
134	Shaikhu Khera . . .	40	33	4	5	34	...
135	Talujaanwaleh (urfi) Humayun Khera . . .	65	37	7	32	56	...
136	Nagrana . . .	8	12	21	...	11	...
137	Raneea . . .	687	300	159	397	431	...
138	Abhauli . . .	53	21	7	29	80	...
139	Otta . . .	65	78	4	17	53	...
140	Abootgarh . . .	19	11	3	1	11	...
141	Chak Rainyawaleh (urfi) Chak (1st) . . .	104	56	2	18	63	...
142	Chak Janewa . . .	...	...	...	...	...	...
143	Dhanoor . . .	103	59	2	66	77	...
144	Alanoor (urfi) Alaha Noor . . .	53	71	2	46	110	...
145	Chorur . . .	172	125	3	75	125	...
146	Ketania . . .	118	87	8	43	83	...
147	Chamel . . .	125	130	14	63	140	...
148	Bansohar . . .	30	92	3	40	191	...
149	Ahmedpur, near Sirsa . . .	15	33	...	14	27	...
150	Meerpur . . .	45	41	...	9	55	...
151	Khaereka . . .	66	82	...	18	89	...
152	Soharan . . .	45	35	...	32	39	...
153	Jhonpra . . .	52	29	...	17	42	...
154	Nezadalla Kalan . . .	200	120	2	65	153	...
155	Nezadalla Khoord . . .	77	74	2	60	53	...
156	Mallewaleh (urfi) Rajen- garh . . .	91	51	...	21	54	...
157	Boodha Bhana . . .	136	113	...	29	98	1
158	Farwain . . .	140	90	15	25	30	...
159	Sangaria Monawala hara (urfi) Boorj Kanamgarh . . .	46	32	3	15	23	...
160	Karar Kote . . .	60	52	1	34	40	...
161	Nagoki . . .	139	97	...	63	73	...
162	Pinhare . . .	178	135	6	89	114	1
163	Mosahwala . . .	65	85	0	25	65	...
164	Rangai . . .	43	60	1	29	53	...
165	Ranjiwala (urfi) Sham- garh . . .	45	46	1	22	45	...
166	Mattar . . .	54	74	...	36	106	...
167	Roori . . .	570	545	49	201	630	...
168	Soortea . . .	319	274	43	112	295	...
169	Phagoo . . .	284	205	5	110	173	1
170	Daisoo Khurd . . .	45	33	...	7	44	...

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List of villages and number of cattle in the Sirsa Tahsil of Hissar District—continued.

No.	NAMES OF VILLAGES.	Number of bullocks.	Number of cows.	Number of buffalo bulls.	Number of buffalo cows.	Number of calves.	Number of Hissar buls.
171	Rohan . . .	44	46	3	14	28	...
172	Mahree . . .	92	74	20	32	70	...
173	Bhewan . . .	138	111	2	49	118	...
174	Theraj, with two Chaks	116	73	1	53	99	...
175	Panj Mala . . .	36	44	...	13	22	...
176	Aluka, near Bhima . .	213	162	4	59	164	...
177	Ierih . . .	100	95	1	80	110	...
178	Bap . . .	159	201	2	63	179	...
179	Chak Bannih . . .	...	...	...	...	...	...
180	Sawayipur . . .	3	16	...	8	16	...
181	Boorj Bhango . . .	21	101	5	52	57	...
182	Dhaha (urf) Bahrajpur	75	40	4	59	45	...
183	Beerwalagoodha . . .	129	115	2	71	116	...
184	Chorer . . .	140	128	4	55	96	...
185	Kurango Wali . . .	140	149	1	66	164	...
186	Bahadur Khera (urf)	...	...	...	...	...	...
187	Bahadra . . .	28	63	...	15	56	...
187	Sookh Chain . . .	229	184	1	114	200	1
188	Soohaywalla . . .	36	67	2	12	48	...
189	Daulatpura . . .	27	62	2	11	39	...
190	Goodha Kalan . . .	198	182	1	75	135	...
191	Bhangoo . . .	123	112	6	51	78	...
192	Panjuana . . .	37	68	1	51	56	...
193	Shaikhapur . . .	32	60	1	33	53	...
194	Fatehpur, Nemat Khan	25	38	...	20	62	...
195	Karaingarh . . .	83	66	...	26	80	...
196	Sohuwalch . . .	122	115	1	115	155	...
197	Chatrizan . . .	25	51	1	6	39	...
198	Ranghuwana . . .	128	127	1	54	113	...
199	Anandgarh . . .	36	58	2	27	67	...
200	Lakarwali . . .	166	99	1	66	159	1
201	Goodrana . . .	135	128	...	55	122	1
202	Khew Wali, near Anandgarh	50	85	...	47	75	...
203	Chukerian (urf) Chatrawali . . .	82	86	17	31	75	...
204	Odhan . . .	203	211	1	71	170	1
205	Ruherawali . . .	15	44	...	30	56	...
206	Ramnagar . . .	17	26	...	14	18	...
207	Panniwali Motanawabad . . .	41	113	12	26	153	...
208	Khoonia (urf) Nipalpur . . .	71	47	...	24	52	...
209	Mordwali . . .	33	48	2	6	34	...
210	Jodhporia . . .	27	78	...	27	67	...
211	Dhothar . . .	54	175	...	44	130	...
212	Sooltanpur . . .	35	43	1	10	38	...
213	Nanuana . . .	22	40	1	2	40	...

HISSAR DISTRICT, Sirsa Tahsil.

*The Agricultural*

OXEN.		Cattle of Hariana					
HISSAR DISTRICT. Sirsa Tahsil.		List of villages and number of cattle in the Sirsa Tahsil of Hissar District—continued.					
No.	NAMES OF VILLAGES.	Number of bullocks.	Number of cows.	Number of buffalo bulls.	Number of buffalo cows.	Number of calves.	Number of Hissar bulls.
214	Fatehpur (urfi) Fatehgarh . . . .	20	12	...	3	13	...
215	Mangalia . . . .	23	20	...	2	15	...
216	Kharian . . . .	70	190	1	62	166	...
217	Dharyawala (urfi) Ab-hul Khair . . . .	19	17	...	14	11	...
218	Bookhara Khera . . . .	41	38	...	6	22	...
219	Peer Khera . . . .	7	38	1	10	26	...
220	Bhagsar . . . .	84	55	...	20	28	...
221	Ghookawali . . . .	86	97	...	31	70	...
222	Khalsharegarh . . . .	20	38	2	9	32	...
223	Bauwala . . . .	53	132	2	22	107	...
224	Bhoona (urfi) Mokmadbad . . . .	30	31	...	3	28	...
225	Moona Khera, near Ranea . . . .	61	49	2	26	60	...
226	Koosar . . . .	144	74	3	52	101	...
227	Mohamedpur, Basna-wala . . . .	11	18	1	19	37	...
228	Balaser . . . .	37	77	3	22	110	...
229	Barholanwali . . . .	64	68	28	1	73	...
230	Naiwala (urfi) Franciswala . . . .	58	14	1	9	15	...
231	Khawja Khera near Ranea . . . .	35	23	1	3	18	...
232	Dhodanwali . . . .	121	121	5	19	171	...
233	Alipur, near Kanjarwala . . . .	48	78	...	21	40	...
234	Bahiya (urfi) Fatehgarh . . . .	138	98	16	38	90	...
235	Sainpal . . . .	157	64	2	22	32	...
236	Nathoshar . . . .	187	95	6	87	104	...
237	Bacheer . . . .	59	54	...	23	48	...
238	Kaluwana . . . .	100	99	2	29	108	...
239	Mambar Khera . . . .	19	84	4	18	93	...
240	Mattuwalla (urfi) Sadharpur . . . .	41	36	6	27	29	...
241	Peadaywala (urfi) Shai-khu Khera . . . .	104	35	9	17	33	...
242	Gandran (urfi) Seldhera . . . .	67	44	1	21	36	...
243	Ghorawali (urfi) Nasirpur . . . .	20	28	2	8	24	...
244	Chakan (urfi) Chakusar . . . .	34	66	1	8	56	...
245	Ramgarh . . . .	19	27	6	2	22	...
246	Rasolia Khera . . . .	57	151	3	13	115	...
247	Ratta Khera . . . .	31	30	...	2	24	...
248	Rajpura . . . .	19	23	...	...	24	...
249	Nahiawali . . . .	115	149	10	36	94	...
250	Salam Khera . . . .	98	90	1	39	84	...

and Sirsa.				(H. T. Pease.)			OXEN.
List of villages and number of cattle in the Sirsa Tahsil of Hissar District—continued.							
No.	NAMES OF VILLAGES.	Number of bullocks.	Number of cows.	Number of buffalo bulls.	Number of buffalo cows.	Number of calves.	Number of Hissar bulls.
251	Jalalana . . .	148	110	8	42	91	..
252	Choramur Khera . .	114	95	5	21	54	...
253	Rampura, near Ratta Khera . . .	66	55	...	29	58	...
254	Jandwala (urf) Janduwala . . .	47	67	...	15	67	...
255	Gauriwala (urf) Bhagwan Khera . . .	50	53	...	8	30	...
256	Modi(urf)Jhuru Khera . .	45	40	...	10	11	...
257	Chakgalu (urf) Munna-wali . . .	5	10	...	2	7	...
258	Bijuwali . . .	64	55	1	20	45	...
259	Faridpur . . .	13	9	...	2	5	...
260	Kairwala(urf)Hasalpur . .	62	52	...	10	38	...
261	Ahmedpur Darawala . .	104	100	7	20	75	...
262	Godeka (urf) Gorusar . .	63	45	...	10	31	...
263	Munnawali . . .	27	35	...	13	27	...
264	Ganga . . .	147	241	1	67	190	...
265	Jandwala . . .	20	130	...	15	35	...
266	Bharu Khera (u r f)						
	Salehan Khera . . .	11	19	...	2	6	...
267	Chotala . . .	171	318	1	48	159	...
268	Asakhera (urf) Moti Khera . . .	20	25	...	7	27	...
269	Sookherawala (u r f)						
	Sabu Khera . . .	72	81	...	8	35	...
270	Taya Khera (urf) Jassa Khera . . .	20	52	1	1	16	...
271	Boohshahr . . .	174	141	1	21	66	...
272	Sakta Khera(urf)Bhodlerkhon . . .	187	104	...	54	115	...
273	Logarh . . .	171	111	...	44	76	1
274	Fatehpur Jootanwali . .	179	120	...	27	51	...
275	Sharegarh . . .	115	89	...	25	66	...
276	Alika, near Masitan . .	220	15	2	67	83	1
277	Nawabwali (urf) Aspan Khera . . .	...	...	...	...	...	...
278	Dahwali . . .	381	187	2	123	222	...
279	Jogewala . . .	164	92	2	51	60	1
280	Panniwali Mehreka . .	132	81	...	51	66	...
281	Daisa Jodha (urf) Bhai Jodhka . . .	334	231	2	96	220	...
282	Mangiana . . .	149	89	2	66	156	...
283	Sanwat Khera . . .	90	41	2	21	53	...
284	Masitan . . .	388	148	8	95	205	...
285	Gobindgarh K h e r a						
	Masitan . . .	8	9	...	...	9	...
286	Lakhindana . . .	60	50	1	21	43	...
287	Gidar Khera . . .	19	7	...	1	8	...

HISSAR DISTRICT.  
Sirsa Tahsil.

*The Agricultural Ledger.*

OXEN.		Cattle of Hariana and Sirsa.					
HISSAR DISTRICT. Sirsa Tahsil.		<i>List of villages and number of cattle in the Sirsa Tahsil of Hissar District—concluded.</i>					
No.	NAMES OF VILLAGES.	Number of bullocks.	Number of cows.	Number of buffalo bulls.	Number of buffalo cows.	Number of calves.	Number of Hissar bulls.
288	Lambi (urf) Mohamedpur . . . . .	97	52	...	19	39	...
289	Jhutti Khera . . . . .	23	41	...	...	39	...
290	Math (urf) Dadukamath . . . . .	174	108	...	53	95	...
291	Monjgarh . . . . .	197	122	1	39	110	...
292	Shahwala (urf) Diwan Khera . . . . .	22	22	1	6	13	...
293	Nilawali . . . . .	78	43	...	19	63	...
294	Haibawana . . . . .	129	87	...	37	70	...
295	Phoollo . . . . .	188	181	...	57	92	...
296	Chitta . . . . .	83	46	1	42	23	...
297	Tigrer . . . . .	61	48	...	6	37	...
298	Naurang . . . . .	92	83	1	44	74	...
299	Khokher . . . . .	86	125	1	31	51	...
300	Makha . . . . .	81	50	9	16	33	...
301	Paniana . . . . .	69	31	9	19	29	...
302	Panniwali Roolde . . . . .	140	93	2	57	126	...
303	Mathri, near Khoonia . . . . .	176	91	13	42	80	...
304	Malakpur . . . . .	79	84	1	13	74	...
305	Kingran (urf) Binoutewali . . . . .	66	45	3	26	52	...
306	Tappi (urf) Fattehpur Khera Pipli . . . . .	53	39	2	5	12	...
307	Piplee . . . . .	214	114	8	30	91	...
308	Jagmalwali . . . . .	247	140	14	90	123	...
309	Asree . . . . .	145	82	1	27	68	1
310	Hassu . . . . .	104	49	1	28	75	...
311	Daisumal Kanch . . . . .	229	172	3	118	157	...
312	Kalanwali . . . . .	394	241	4	105	280	...
313	Takhtmal . . . . .	115	182	8	68	50	...
314	Khooniya . . . . .	367	141	3	72	115	...
315	Taruwana . . . . .	166	94	30	42	96	1
316	Tiloka . . . . .	60	40	11	20	38	...
317	Khutraon . . . . .	65	37	1	20	30	...
318	Dograwali . . . . .	18	8	2	4	5	...
319	Koomal . . . . .	33	28	...	15	35	...
320	Pakka . . . . .	140	95	1	95	147	...
321	Dadu . . . . .	204	163	3	92	255	...
322	Kewal . . . . .	161	110	22	55	90	...
323	Dharpura . . . . .	100	72	13	31	95	...
324	Rampura, near Singapura . . . . .	...	...	...	...	...	...
325	Singapura . . . . .	141	224	2	84	132	...

All communications regarding THE AGRICULTURAL LEDGER should be addressed to the Editor, Dr. George Watt, Reporter on Economic Products to the Government of India, Calcutta.

The objects of this publication (as already stated) are to gradually develop and perfect our knowledge of Indian Agricultural and Economic questions. Contributions or corrections and additions will therefore be most welcome.

In order to preserve a necessary relation to the various Departments of Government, contributions will be classified and numbered under certain series. Thus, for example, papers on Veterinary subjects will be registered under the Veterinary Series; those on Forestry in the Forest Series. Papers of more direct Agricultural or Industrial interest will be grouped according as the products dealt with belong to the Vegetable or Animal Kingdom. In a like manner, contributions on Mineral and Metallic subjects will be registered under the Mineral Series.

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